



PATENT APPLICATION  
Attorney Docket No. XERZ 2 00397  
A0778-US-NP

EXHIBIT A

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF : Philip G. Foell et al.  
FOR : PROJECT PLANNING SYSTEM AND  
METHOD FOR ACCOMMODATING  
AD HOC REQUESTS WITHIN A  
FIXED CORE DEVELOPMENT  
CYCLE  
SERIAL NO. : 09/712,438  
FILED : November 14, 2000  
EXAMINER : Michael C. Heck  
ART UNIT : 3623  
LAST OFFICE ACTION : April 27, 2005  
ATTORNEY DOCKET NO. : XERZ 2 00397 / A0778-US-NP

DECLARATION UNDER 37 C.F.R. §1.131

Commissar for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Commissioner:

As a person signing below:

1. We, Philip G. Foell, Teresa M. Light, David R. Podnar and Peggy S. Koontz are the coinventors of claims 1-33 of the above-identified patent application.

2. We have read and are familiar with "Activity Scheduling in the Dynamic, Multi-Project Setting: Choosing Heuristics Through Deterministic Simulation", by Robert C. Ash and published sometime after November 1, 1999.

3. We hereby declare that at a date at least prior to November 1, 1999, we had completed the invention as described and claimed in the subject application in this country, the United States of America. In this regard, we have attached Exhibits 1-13

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as evidence of completion of the invention prior to November 1, 1999. We hereby declare and say the relevant portions of Exhibits 1-13 were prepared at least prior to November 1, 1999.

4. Specifically, redacted copies of Exhibits 1-13, attached hereto, provide evidence the claimed subject matter of the above referenced patent application and Amendment filed on January 24, 2005 was completed prior to November 1, 1999.

Regarding Exhibit 1, Time Tracking Policy and Time Tracking Q&A: This document shows the policy we used to track multiple projects and establishes completion of the invention.

This exhibit addresses the method for managing the planning and performance of multiple projects by using a processing system for managing the planning and performance of multiple projects as described in Claim 1. It also addresses the information handling system by outlining the policy for inputting time into the system to periodically receive input of actual time spent in performing the projects as stated in Claim 13.

Regarding Exhibit 2, Bradley Company Process Improvement Status: This is a document that provided a status to Xerox Senior Management on the Bradley Process Improvement efforts. A key message in this document is the purchase and installation of the Time Wizard tool used to track projects and establishes completion of that implementation. Another key message in the Software Project Planning area is a communication regarding the creation of the content management process, which provides a framework for the selection, prioritization and estimating the requirements for a release.

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Regarding Exhibit 3, Where are we going with Planning and Process Improvement Short Term?: This document is an email that describes the Planning Process improvements and provides an explanation of what the team was doing at the time. An important area of this document addresses the Special Program (Factory 2) planning improvements underway at the time. This also includes several spreadsheets that provide examples of the way the tracking data was reviewed for effective and calculating the hours available for planning.

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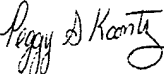
We hereby declare that all statements made herein of our own knowledge are true and that all statements made on information and belief are believed to be true, and

further that these statements were made with the knowledge that willful false statement and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

\_\_\_\_\_  
Philip G. Foell Date

\_\_\_\_\_  
Teresa M. Light Date

(Unavailable)  
\_\_\_\_\_  
David R. Podnar Date

  
\_\_\_\_\_  
Peggy S. Koontz September 26, 2005 Date



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Philip G. Foell \_\_\_\_\_ Date \_\_\_\_\_

*Teresa M. Light* \_\_\_\_\_ 9-26-05  
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## Final Program

INTRODUCTORY TUTORIALS  
SOFTWARE TUTORIALS I  
ANALYSIS METHODOLOGY  
MANUFACTURING APPLICATIONS  
SEMICONDUCTOR MANUFACTURING  
  
MILITARY APPLICATIONS  
  
BUSINESS PROCESS SIMULATION  
HEALTHCARE

ADVANCED TUTORIALS  
SOFTWARE TUTORIALS II  
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SPECIAL-FOCUS PRESENTATIONS I  
CONSTRUCTION ENGINEERING  
AND PROJECT MANAGEMENT  
LOGISTICS, TRANSPORTATION  
& DISTRIBUTION APPLICATIONS  
FUTURE OF SIMULATION  
SPECIAL-FOCUS PRESENTATIONS II

### Previous WSC Programs and Papers

## OPENING SESSION

Monday 8:30 a.m.–10:00 a.m.

Moderator: David Sturrock (Systems Modeling Corporation)

*Welcome from the General Chair*

David Sturrock (Systems Modeling Corporation)

***Keynote Address: The Use of Simulation in Call Center Optimization***

Jon Anton (Purdue University)

[ [top](#) | [Previous WSC Programs and Papers](#) ]

## INTRODUCTORY TUTORIALS

Monday 10:30 a.m.–12:00 noon

### Simulation Fundamentals

Chair: Deborah Cook (Virginia Polytechnic Institute and State University)

*Introduction to Simulation*

Jerry Banks (AutoSimulations, Inc.)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

Monday 1:30 p.m.–3:00 p.m.

### Input Modeling

Chair: Phil Farrington (University of Alabama in Huntsville)

*Simulation Input Modeling*

Lawrence Leemis (College of William and Mary)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

Monday 3:30 p.m.–5:00 p.m.

### Output Analysis

Chair: James Calvin (New Jersey Institute of Technology)



*Introduction to Output Analysis*

Susan Sanchez (University of Missouri–St. Louis)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]**Tuesday 8:30 a.m.–10:00 a.m.****Design of Simulation Experiments**

Chair: Thanos Avramidis (Cornell University)

*Designing Simulation Experiments*

W. David Kelton (University of Cincinnati)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]**Tuesday 10:30 a.m.–12:00 noon****Validation and Verification**

Chair: Daniel Villareal (Decisiones Inteligentes, SA CV)

*Validation and Verification of Simulation Models*

Robert G. Sargent (Syracuse University)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]**Tuesday 1:30 p.m.–3:00 p.m.****Simulation in Health Care**

Chair: Marelys Garcia (Lockwood Greene)

*A Tutorial on Simulation in Health Care: Applications and Issues*

Charles Standridge (Grand Valley State University)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]**Tuesday 3:30 p.m.–5:00 p.m.****Manufacturing Simulation**

Chair: John Fowler (Arizona State University)

*Simulation of Manufacturing Systems*

Averill M. Law (Averill M. Law &amp; Associates, Inc.)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]**Wednesday 8:30 a.m.–10:00 a.m.****Simulation in Practice**

Chair: Michael E. Kuhl (Louisiana State University)

*Tips for Successful Practice of Simulation*

Deborah Sadowski (Systems Modeling Corporation) and Mark R. Grabau (Andersen Consulting)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]*Simulation Solutions to a World of Problems: Tales from the Trenches*

Williard C. Hewitt, Jr. and Eric E. Miller (TransSolutions Corporation)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]**Wednesday 10:30 a.m.–12:00 noon****Simulation Software**

Chair: Chris Zobel (Virginia Polytechnic Institute and State University)

*Inside Discrete-Event Simulation Software: How It Works and Why It Matters*

Thomas J. Schriber (University of Michigan) and Daniel T. Brunner (Systemflow Simulations, Inc.)  
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## ADVANCED TUTORIALS

**Monday 10:30 a.m.–12:00 noon**

**Statistical Selection, Screening, and Multiple-Comparison Procedures**

Chair: Linda Malone (University of Central Florida)

*A Ranking and Selection Project: Experiences from a  
University-Industry Collaboration*

David Goldsman (Georgia Institute of Technology), Barry Nelson (Northwestern University), Tracy Opicka (Purdue University), and Alan Pritsker (Symix Systems, Inc./Pritsker Division)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

**Monday 1:30 p.m.–3:00 p.m.**

**Overview of Simulation Optimization**

Chair: Martin Steele (University of Central Florida)

*Simulation Optimization Methodologies*

Farhad Azadivar (Kansas State University)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

**Monday 3:30 p.m.–5:00 p.m.**

**Recent Advances in Optimization of Stochastic Simulations**

Chair: Farhad Azadivar (Kansas State University)

*Stochastic Optimization and the Simultaneous Perturbation Method*

James C. Spall (The Johns Hopkins University)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

**Tuesday 8:30 a.m.–10:00 a.m.**

**Input Modeling for Stochastic Simulations**

Chair: Charles Reilly (University of Central Florida)

*When Standard Input Models Fail*

Bruce Schmeiser (Purdue University)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

**Tuesday 10:30 a.m.–12:00 noon**

**Simulation-Based Evaluation of Optimization Methods**

Chair: Heinz Weigl (ELSA)

*Input Models for Synthetic Optimization Problems*

Charles Reilly (University of Central Florida)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

**Tuesday 1:30 p.m.–3:00 p.m.**

**Overview of Parallel and Distributed Simulation**

Chair: Henrik Hedlund (University of Central Florida)

*Parallel and Distributed Simulation*

Richard Fujimoto (Georgia Institute of Technology)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]**Tuesday 3:30 a.m.–5:00 p.m.****Overview of Object-Oriented Simulation**

Chair: Edward Yellig (Intel Corporation)

*Simulation in an Object-Oriented World*

Jeffrey A. Joines and Stephen D. Roberts (North Carolina State University)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]**Wednesday 8:30 a.m.–10:00 a.m.****Future Simulation Technologies**

Chair: Eyitope St. Matthew-Daniel (University of Central Florida)

*Simulation: Technologies in the New Millennium*

Wayne Davis (University of Illinois at Urbana–Champaign)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]**Wednesday 10:30 a.m.–12:00 noon****Recent Advances in Verification and Validation**

Chair: Dhananjay S. Joshi (Motorola, Inc.)

*Verification and Validation: What Impact Should Project Size and Complexity Have on Attendant V&V Activities and Supporting Infrastructure?*

James D. Arthur (Virginia Polytechnic Institute and State University) and Robert G. Sargent (Syracuse University)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ][ [top](#) | [Previous WSC Programs and Papers](#) ]**SOFTWARE TUTORIALS I****Monday 10:30 a.m.–12:00 noon****Arena Product Family**

Chair: David Ferrin (Andersen Consulting)

*The Arena Product Family: Enterprise Modeling Solutions*

Deborah A. Sadowski and Vivek Bapat (Systems Modeling Corporation)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]**Monday 1:30 p.m.–3:00 p.m.****SLX, Proof, and GPSS/H**

Chair: Jack Levis (United Parcel Service)

*SLX: Pyramid Power*

James O. Henriksen (Wolverine Software Corporation)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]*General-Purpose Concurrent and Post-Processed Animation with Proof*

James O. Henriksen (Wolverine Software Corporation)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*Simulation Using GPSS/H*

Robert C. Crain and James O. Henriksen (Wolverine Software Corporation)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]**Monday 3:30 p.m.–5:00 p.m.****Extend**

Chair: A. Yonca Demir (General Electric)

*Modeling with Extend*

David Krah (Imagine That, Inc.)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]**Tuesday 8:30 a.m.–10:00 a.m.****AweSim and FACTOR/AIM**

Chair: Eric Miller (TransSolutions Corporation)

*Introduction to AweSim*

Jean J. O'Reilly, William R. Lilegdon, and Alan Pritsker (Symix Systems, Inc.)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]*Introduction to FACTOR/AIM*

Jean J. O'Reilly and William R. Lilegdon (Symix Systems, Inc.)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]**Tuesday 10:30 a.m.–12:00 noon****PROMODEL and MEDMODEL**

Chair: Steven Brown (Infineon Technologies)

*Simulation Modeling and Optimization Using PROMODEL*

Rochelle N. Price (PROMODEL Corporation) and Charles R. Harrell (Brigham Young University)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]*Healthcare Simulation Modeling and Optimization Using MEDMODEL*

Rochelle N. Price (PROMODEL Corporation) and Charles R. Harrell (Brigham Young University)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]**Tuesday 1:30 p.m.–3:00 p.m.****AutoMod Product Suite**

Chair: Tony Dean (Motorola, Inc.)

*AutoMod Product Suite Tutorial (AutoMod, Simulator, AutoStat) by AutoSimulations*

Matt Rohrer (AutoSimulations, Inc.)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]**Tuesday 3:30 p.m.–5:00 p.m.****Taylor Enterprise Dynamics**

Chair: Larry Owen (ITT Systems Corporation)

*Taylor Enterprise Dynamics*

D. Roger Hullinger (F&amp;H Simulations, Inc.)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]**Wednesday 8:30 a.m.–10:00 a.m.**

**Witness**

Chair: Mani Janakiram (Intel Corporation)

*Business Solutions Using Witness*

Arvind Mehta and Ian Rawles (Lanner Group, Inc.)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

**Wednesday 10:30 a.m.–12:00 noon**

**MODSIM III**

Chair: Marcella M. Madsen (Sandia National Laboratories)

*MODSIM III and CACI's Applications*

Brian Wood and Kerim Tumay (CACI Products Company)

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**SOFTWARE TUTORIALS II**

**Monday 10:30 a.m.–12:00 noon**

**SDI Industry Pro**

Chair: Felisa Vázquez-Abad (Université de Montréal)

*SDI Industry Pro: Simulation for Enterprise-Wide Problem Solving*

Andrew J. Siprelle, David J. Parsons, and Richard A. Phelps (Simulation Dynamics, Inc.)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

**Monday 1:30 p.m.–3:00 p.m.**

**CSIM18**

Chair: Laurel Travis (Metropolitan State University)

*"Model, Then Build": A Modern Approach to Systems Development Using CSIM18*

Herb Schwetman (Mesquite Software, Inc.)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

**Monday 3:30 p.m.–5:00 p.m.**

**OptQuest**

Chair: David Kelton (University of Cincinnati)

*New Advances for Wedding Optimization and Simulation*

Fred Glover, James P. Kelly, and Manuel Laguna (University of Colorado)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

**Tuesday 8:30 a.m.–10:00 a.m.**

**ExpertFit**

Chair: Mark Grabau (Andersen Consulting)

*ExpertFit: Total Support for Simulation Input Modeling*

Averill M. Law and Michael G. McComas (Averill M. Law and Associates, Inc.)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

**Tuesday 10:30 a.m.–12:00 noon**

**ALPHA/Sim**

Chair: Lisa Schaefer (Arizona State University)

*ALPHA/Sim Simulation Software Tutorial*

Kendra Moore, Jack Chiang, and Scott Hammer (ALPHATECH, Inc.)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

**Tuesday 1:30 p.m.–3:00 p.m.**

**Simulation Data Exchange**

Chair: Michael Taaffe (University of Minnesota)

*Integrating the CAD Model with Dynamic Simulation: Simulation Data Exchange*

Shreekanth Moorthy (Engineering Animation, Inc.)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

**Tuesday 3:30 p.m.–5:00 p.m.**

**QUEST/IGRIP and Micro Saint**

Chair: Leyuan Shi (University of Wisconsin – Madison)

*An Overview of Fully Integrated Digital Manufacturing Technology*

Scott Freedman (Deneb Robotics, Inc.)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*Simulation Interoperability Using Micro Saint Simulation Software*

Wendy K. Bloechle and K. Ronald Laughery (Micro Analysis & Design, Inc.)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

**Wednesday 8:30 a.m.–10:00 a.m.**

**Integrated Toolkit**

Chair: Lei Rao (ITT Systems Corporation)

*An Integrated Toolkit for Enterprise Modeling and Analysis*

Dursun Delen, Perakath C. Benjamin, and Madhav Erraguntla (Knowledge Based Systems, Inc.)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

**Wednesday 10:30 a.m.–12:00 noon**

**Web Micro-GPSS in High Schools and OPNET**

Chair: Ian Rawles (Lanner Group, Inc.)

*Micro-GPSS on the Web and for Windows: A Tool for Introduction to Simulation in High Schools*

Henry Herper (Otto-von-Guericke University) and Ingolf Ståhl (Stockholm School of Economics)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*Network Simulations with OPNET*

Xinjie Chang (University of Kansas) and K. R. Subramanian (Nanyang Technological University, SINGAPORE)

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## ANALYSIS METHODOLOGY

**Monday 10:30 a.m.–12:00 noon**

**Bayesian and Decision Based Methods in Simulation**

Chair: Stephen Chick (University of Michigan)

*Steps to Implement Bayesian Input Distribution Selection*

Stephen Chick (University of Michigan)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]*Using In-Process Indicators for Dynamic Decision Making*

M. Freimer (Cornell University) and L. Schruben (University of California, Berkeley)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]*Regression Metamodeling in Simulation Using Bayesian Methods*

R. C. H. Cheng (University of Southampton)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]**Monday 1:30 p.m.–3:00 p.m.****Financial Engineering**

Chair: John Charnes (University of Kansas)

*Variance Reduction of Monte Carlo and Randomized Quasi-Monte Carlo Estimators for Stochastic Volatility Models in Finance*

H. B. Ameer, P. L'Ecuyer, and C. Lemieux (Université de Montréal)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]*Bias Reduction for Simulation of American Options*

T. Avramidis and P. Hyden (Cornell University)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]*Stratification Issues in Estimating Value-at-Risk*

P. Glasserman (Columbia University), P. Heidelberger (IBM Corporation), and P. Shahabuddin (Columbia University)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]**Monday 3:30 p.m.–5:00 p.m.****Efficiency in Simulation Experiments**

Chair: Russell Cheng (University of Southampton)

*An Asymptotic Allocation for Simultaneous Simulation Experiments*

J. Lin, H.-C. Chen, C. H. Chen (University of Pennsylvania), and E. Yücesan (INSEAD)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]*Can the Regenerative Method Be Applied to Discrete-Event Simulation?*

S. G. Henderson (University of Auckland) and P. W. Glynn (Stanford University)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]*Fast Simulation of Broadband Telecommunications Networks Carrying Long-Range Dependent Bursty Traffic*

José R. Gallardo, Dimitrios Makrakis (The University of Western Ontario), and Luis Orozco-Barbosa (University of Ottawa)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]**Tuesday 8:30 a.m.–10:00 a.m.****Ranking and Selection Procedures**

Chair: C. H. Chen (University of Pennsylvania)

*Selection Procedures with Standardized Time Series Variance Estimators*

D. Goldsman and W. Marshall (Georgia Institute of Technology)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*Designing Simultaneous Simulation Experiments*

Paul Hyden (Cornell University) and Lee Schruben (University of California, Berkeley)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*Simultaneous Simulation Experiments and Nested Partition for Discrete Resource Allocation in Supply Chain Management*

L. Shi (University of Wisconsin-Madison), C. H. Chen (University of Pennsylvania), and E. Yücesan (INSEAD)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

**Tuesday 10:30 a.m.–12:00 noon**

**Rare Event Simulation**

Chair: Perwez Shahabuddin (Columbia University)

*Efficient Rare Event Simulation of Delay in Packet Switching Networks Using DPR-Based Splitting*

Z. Haraszti (Ericsson) and K. Townsend (North Carolina State University)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*Efficient Simulation of a Tandem Jackson Network*

Dirk P. Kroese (University of Adelaide) and Victor F. Nicola (University of Twente)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*Simulating Heavy Tailed Processes Using Delayed Hazard Rate Twisting*

Sandeep Juneja (Indian Institute of Technology), Perwez Shahabuddin (Columbia University), and Anurag Chandra (Massachusetts Institute of Technology)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

**Tuesday 1:30 p.m.–3:00 p.m.**

**New and Improved Techniques for Old Problems**

Chair: Marvin Nakayama (New Jersey Institute of Technology)

*Simulation-Based Estimation of Quantiles*

E. J. Chen and W. D. Kelton (University of Cincinnati)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*On the Implementation of Smoothed Perturbation Analysis Estimator for a Single Server Queue with Multiple Vacations*

T. Tagaki (Kyoto University) and N. Miyoshi (Tokyo Institute of Technology)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*Improved Batching for Confidence Interval Construction in Steady State Simulation*

N. M. Steiger and J. R. Wilson (North Carolina State University)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

**Tuesday 3:30 p.m.–5:00 p.m.**

**Planning Queueing Simulations**

Chair: Douglas Morrice (The University of Texas at Austin)

*Sensitivity of Output Performance Measures to Input Distribution Shape in Modeling Queues—3: Real Data Scenario*

D. Gross (George Mason University)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]



*Simulating a Nonstationary Poisson Process Using Bivariate Thinning: The Case of "Typical Weekday" Arrivals at a Consumer Electronics Store*

K. P. White, Jr. (University of Virginia)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*Sensitivity Analysis of Simulation Output to Parameters of Nonhomogeneous Poisson Processes*

M. E. Kuhl and S. E. Lim (Louisiana State University)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

### **Wednesday 8:30 a.m.–10:00 a.m.**

#### **Simulation Optimization**

Chair: Sheldon Jacobson (University of Illinois at Urbana–Champaign)

*Optimization over Discrete Sets via SPSA*

L. Gerencsér (Hungarian Academy of Sciences), S. D. Hill (Johns Hopkins University), and Z. Vágó (Hungarian Academy of Sciences)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*Solving Stochastic Optimization Problems with Stochastic Constraints: An Application in Network Design*

G. Gürkan (Tilburg University) and A. Y. Demir (General Electric), and Stephen M. Robinson (University of Wisconsin-Madison)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*Iterative Ranking and Selection for Large-Scale Optimization*

S. Ólafsson (Iowa State University)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

### **Wednesday 10:30 a.m.–12:00 noon**

#### **Surveys in Performance Modeling**

Chair: John Fowler (Arizona State University)

*Statistical Methods for Sensitivity and Performance Analysis of Computer Experiments*

L. M. Moore (Los Alamos National Laboratory) and B. K. Ray (New Jersey Institute of Technology)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*A Survey of Ranking, Selection, and Multiple Comparison Procedures for Discrete-Event Simulation*

J. R. Swisher (Biological and Popular Culture, Inc.) and S. H. Jacobson (University of Illinois at Urbana–Champaign)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*The Main Issues in Nonlinear Simulation Metamodel Estimation*

M. I. Reis dos Santos and A. M. O. Porta Nova (Instituto Superior Técnico)

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## **MODELING AND ANALYSIS METHODOLOGY**

### **Monday 10:30 a.m.–12:00 noon**

#### **Distributed and Parallel Simulation Environments**

Chair: Charles R. Standridge (Grand Valley State University)

*A Java-Based Simulation Manager for Optimization and Response Surface Methodology in Multiple-Response*

*Parallel Simulation*

William E. Biles (University of Louisville) and Jack P. C. Kleijnen (Tilburg University)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]*Developing Interest Management Techniques in Distributed Interactive Simulation Using JAVA*

Simon J. E. Taylor, J. Saville, and R. Sudra (Brunel University)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]*An Investigation of Out-of-Core Parallel Discrete-Event Simulation*

Anna L. Poplawski and David M. Nicol (Dartmouth College)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]**Monday 1:30 p.m.–3:00 p.m.****Simulation in Systems Design**

Chair: Simon J. E. Taylor (Brunel University)

*Simulation-Based Constraint Generation with Applications to Optimization of Logistic System Design*

Susumu Morito, Jun Koida (Waseda University), Tsukasa Iwama, Masanori Sato, and Yoshiaki Tamura (Institute for Posts and Telecommunications Policy)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]*The Development of a Methodology for the Use of Neural Networks and Simulation Modeling in System Design*

Mahdi Nasereddin and Mansooreh Mollaghasemi (University of Central Florida)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]*A Monte Carlo Study of Genetic Algorithm Initial Population Generation Methods*

Raymond R. Hill (Air Force Institute of Technology)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]**Monday 3:30 p.m.–5:00 p.m.****Hierarchical and Incremental Modeling**

Chair: Lars Randell (Lund University)

*Hierarchical Modeling and Multiresolution Simulation*

Michael Kantner (Kantner Consulting)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]*Observations on the Complexity of Composable Simulation*

Ernest H. Page and Jeffrey M. Opper (MITRE Corporation)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]*Incremental System Development of Large Discrete-Event Simulation Models*

Lars Randell, Lars G. Holst, and Gunnar S. Bolmsj  (Lund University)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]**Tuesday 8:30 a.m.–10:00 a.m.****Modeling Strategies for Simulation Optimization**

Chair: William E. Biles (University of Louisville)

*SMG: A New Simulation/Optimization Approach for Large-Scale Problems*

C. Zobel (Virginia Polytechnic Institute and State University) and W. T. Scherer (University of Virginia)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*A Simulation Aided Solution to an MCDM Problem*

Ferenc Szidarovszky and Abdollah Eskandari (University of Arizona)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]*An Algorithm for Goal-Driven Simulation*

Michel Page, Jérôme Gensel, and Mahfoud Boudis (Université Pierre Mendes)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]**Tuesday 10:30 a.m.–12:00 noon****Modular Simulation Environments**

Chair: Susumu Morito (Waseda University)

*Database Oriented Modeling with Simulation Microfunctions*

Thomas Weidemann (Technical University of Berlin)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]*Knowledge-Based Modeling of Discrete-Event Simulation Systems*

Henk de Swaan Arons (Erasmus University)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]*Modular Simulation Environments: An Object Manager Based Architecture*

Charles R. Standridge (Grand Valley State University)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]**Tuesday 1:30 p.m.–3:00 p.m.****Ranking and Selection in Simulation**

Chair: Barry L. Nelson (Northwestern University)

*A Decision-Theoretic Approach to Screening and Selection with Common Random Numbers*

Stephen Chick and Koichiro Inoue (University of Michigan)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]*Evaluating the Probability of a Good Selection*

Barry L. Nelson and Souvik Banerjee (Northwestern University)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]*Sensitivity Analysis in Ranking and Selection with Multiple Performance Measures*

Douglas J. Morrice (The University of Texas at Austin), Peter W. Mullarkey (Maxager Technology), John Butler (The Ohio State University), and Srinagesh Gavireni (Schlumberger)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]**Tuesday 3:30 p.m.–5:00 p.m.****Random Number Generation/Design of Experiments**

Chair: Pierre L'Ecuyer (Université de Montréal)

*Monkeys, Gambling, and Return Times: Assessing Pseudorandomness*

Stefan Wegenkittl (University of Salzburg)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]*Quasi-Monte Carlo via Linear Shift-Register Sequences*

Pierre L'Ecuyer and Christiane Lemieux (Université de Montréal)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*Comparison of a Two-Stage Group-Screening Design to a Standard  $2^{k-P}$  Design for a Whole-Line Semiconductor Manufacturing Simulation Model*

Theodora Ivanova (Lucent Technologies), Linda Malone, and Mansooreh Mollaghasemi (University of Central Florida)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

**Wednesday 8:30 a.m.–10:00 a.m.**

**Simulation Validation and Output Analysis**

Chair: Mansooreh Mollaghasemi (University of Central Florida)

*Validation of Models: Statistical Techniques and Data Availability*

Jack P.C. Kleijnen (Tilburg University)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*On the Small-Sample Optimality of Multiple-Regeneration Estimators*

James M. Calvin (New Jersey Institute of Technology), Peter Glynn (Stanford University), and Marvin K. Nakayama (New Jersey Institute of Technology)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*Determining a Warm-up Period for Telephone Network Routing Simulation*

C. Zobel (Virginia Polytechnic Institute and State University) and K. P. White (University of Virginia)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

**Wednesday 10:30 a.m.–12:00 noon**

**Simulation Optimization**

Chair: Raymond R. Hill (Air Force Institute of Technology)

*Optimization via Adaptive Sampling and Regenerative Simulation*

Sigurdur Ólafsson and Leyuan Shi (University of Wisconsin–Madison)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*Polynomial Acceleration of Monte-Carlo Global Search*

James M. Calvin (New Jersey Institute of Technology)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*An Approach for Finding Discrete Variable Design Alternatives Using a Simulation Optimization Method*

Young Hae Lee, Kyoung Jong Park (Hanyang University), and Tag Gon Nim (KAIST)

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**MANUFACTURING APPLICATIONS**

**Monday 10:30 a.m.–12:00 noon**

**Assembly Process Analysis**

Chair: Charles Harrell (PROMODEL Corporation)

*Analysis of Electronics Assembly Operations: Longbow HELLFIRE Missile Power Supply*

Kurt G. Springfield, John D. Hall (TASC, Inc.), and Gregg W. Bell (Northrop Grumman Corporation)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*Design and Evaluation of a Selective Assembly Station for High Precision Scroll Compressor Shells*

Arne Thesen and Akachai Jantayavichit (University of Wisconsin–Madison)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*Integrating Discrete-Event Simulation with Statistical Process Control Charts for Transitions in a Manufacturing Environment*

Harriet Black Nemhard, Ming-Shu Kao, and Gino Lim (University of Wisconsin-Madison)

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**Monday 1:30 p.m.–3:00 p.m.**

**Operational Policy Analysis I**

Chair: Matt Rohrer (AutoSimulations, Inc.)

*Comparison of Dispatching Rules for Semiconductor Manufacturing Using Large Facility Models*

Manfred Mittler (IBM Corporation) and Alexander K. Schoemig (Infineon Technologies)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*Evaluation of Cluster Tool Throughput for Thin Film Head Production Using Simulation*

Eric J. Koehler, Timbur M. Wulf, Alvin C. Bruska (Seagate Technology), and Marvin S. Seppanen (Productive Systems of Winona)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*Determining Optimal Lot Size for a Semiconductor Back-End Factory*

Juergen Potoradi, Gerald Winz, and Weng Kam Lee (Infineon Technologies)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

**Monday 3:30 p.m.–5:00 p.m.**

**Operational Policy Analysis II**

Chair: Dean Orlando (The Lanner Group)

*Optimization of Cycle Time and Utilization in Semiconductor Test Manufacturing Using Simulation-Based, On-Line, Near-Real-Time Scheduling System*

Appa Iyer Sivakumar (Nanyang Technological University)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*Use of Dynamic Simulation to Analyze Storage and Retrieval Strategies*

Mark Kosfeld and Timothy D. Quinn (Intel Corporation)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*A Simulation Model to Study the Dynamics in a Service-Oriented Supply Chain*

Edward Anderson and Douglas J. Morrice (The University of Texas at Austin)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

**Tuesday 8:30 a.m.–10:00 a.m.**

**Manufacturing Simulation: State-of-the-Art Review**

Chair: Onur M. Ülgen (Production Modeling Corporation and the University of Michigan–Dearborn)

*Increasing the Power and Value of Manufacturing Simulation via Collaboration with Other Analytical Tools: A Panel Discussion*

Onur M. Ülgen (University of Michigan and Production Modeling Corporation), John Shore (Production Modeling Corporation), Demet Wood (General Motors Corporation), Dave Sly (Engineering Animation, Inc.), Matt Rohrer (AutoSimulations, Inc.), and P. E. Coffman, Jr. (Ford Motor Company)

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**Tuesday 10:30 a.m.–12:00 noon**

**Process Validation and Improvement**

Chair: J. P. Rasaiah (Applied Manufacturing Technologies, Inc.)

*Ancillary Effects of Simulation*

Matt Hickie (Motorola, Inc.) and John W. Fowler (Arizona State University)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]*Validating a Manufacturing Paradigm: A System Dynamics Modeling Approach*

Richard A. Reid and Elsa L. Koljonen (University of New Mexico)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]*Simulation as a Tool for Continuous Process Improvement*

Mel Adams, Paul Compton, Hank Czarnecki, Trey Commander, and Bernard J. Schroer (University of Alabama in Huntsville)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]**Tuesday 1:30 p.m.–3:00 p.m.****Simulation Analyses of Material Handling**

Chair: Mark Krankel (Deneb Robotics, Inc.)

*A Comparison of the Exponential and the Hyperexponential Distributions for Modeling Move Requests in a Semiconductor Fab*

Siroos Sokhan-Sanj, Gabriel Gaxiola (PRI Automation, Inc.), Gerald T. Mackulak, and Fredrik B. Malmgren (Arizona State University)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]*Reducing Model Creation Cycle Time by Automated Conversion of a CAD AMHS Layout Design*

Igor Paprotny, Wendy Zhao (PRI Automation, Inc.), and Gerald T. Mackulak (Arizona State University)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]*Increasing First Pass Accuracy of AMHS Simulation Output Using Legacy Data*

Scott Wu, John Rayter, Igor Paprotny (PRI Automation, Inc.), Gerald T. Mackulak, and Joakim Yngve (Arizona State University)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]**Tuesday 3:30 p.m.–5:00 p.m.****Manufacturing Modeling Methodology**

Chair: John Shore (Production Modeling Corporation)

*Development of a Simulation Model for an Army Chemical Munition Disposal Facility*

Michael A. Berger, Jiuyi Hua, Paul T. Otis, Katrina S. Werpetsinski (Mitretek Systems, Inc.), and Vincent F. Johnston (U.S. Army)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]*Interface Driven Domain-Independent Modeling Architecture for "Soft-Commissioning" and "Reality in the Loop"*

Franz Auinger, Markus Vorderwinkler, and Georg Buchtela (PROFACTOR Produktionsforschungs GmbH.)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]*Simulation Optimization with the Linear Move and Exchange Move Optimization Algorithm*

Marcos Ribeiro Pereira Barretto, Leonardo Chwif (University of São Paulo), Tillal Eldabi, and Ray J. Paul (Brunel University)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

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## SPECIAL-FOCUS PRESENTATIONS I

**Wednesday 8:30 a.m.–10:00 a.m.**

### **Modeling the Human Element**

Chair: Ron Laughery (Micro Analysis and Design, Inc.)

*Using Discrete-Event Simulation to Model Human Performance in Complex Systems*

Ron Laughery (Micro Analysis and Design, Inc.)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*Simulation as a Tool for Studying the Human Element in Air Traffic Control*

Kevin Corker (San Jose State University and Micro Analysis and Design, Inc.)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

**Wednesday 10:30 a.m.–12:00 noon**

### **Industrial Engineering Design via Simulation (Panel)**

Chair: Deidra L. Donald (Deneb Robotics, Inc.)

*The New Design: The Changing Role of Industrial Engineers in the Design Process through the Use of Simulation (Panel)*

Deidra L. Donald (Deneb Robotics, Inc.), Jeffrey Abell (DaimlerChrysler Corporation), Robert J. Schreiber (The Boeing Company), and Nick Andreou (General Motors Corporation)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

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## SEMICONDUCTOR MANUFACTURING

**Monday 10:30 a.m.–12:00 noon**

### **Semiconductor Manufacturing Applications I**

Chair: John Fowler (Arizona State University)

*On the Corrupting Influence of Variability in Semiconductor Manufacturing*

Alexander K. Schoemig (Infineon Technologies)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*Validating Simulation Model Cycle Times at Seagate Technology*

Navdeep S. Grewal, Timbur Wulf, Alvin C. Bruska (Seagate Technology), and Jennifer K. Robinson (Chance & Robinson, Inc.)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*CONLOAD – A New Lot Release Rule for Semiconductor Wafer Fabs*

Oliver Rose (University of Wurzburg)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

**Monday 1:30 p.m.–3:00 p.m.**

### **Semiconductor Manufacturing Applications II**

Chair: Voratas Kachitvichyanukul (Asian Institute of Technology)

*Assessment of Potential Gains in Productivity due to Proactive Reticle Management Using Discrete Event Simulation*

Matt Hickie (Motorola, Inc.), Sungmin Park, John Fowler, and Matt Carlyle (Arizona State University)  
 [ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*Operational Simulation of an X-Ray Lithography Cell: Comparison of 200mm and 300mm Wafers*  
 K. Preston White, Jr. (University of Virginia), and Walt J. Trybula (International SEMATECH)  
 [ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*Using Simulation and Genetic Algorithms to Improve Cluster Tool Performance*  
 Mathias A. Dummmler (University of Wurzburg)  
 [ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

### **Monday 3:30 p.m.–5:00 p.m.**

#### **Semiconductor Manufacturing Applications III**

Chair: Steven Brown (Infineon Technologies)

*Capacity Planning for Semiconductor Wafer Fabrication with Time Constraints between Operations*  
 Jennifer K. Robinson (Chance & Robinson, Inc.) and Richard Giglio (University of Massachusetts–Amherst)  
 [ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*Criticality of Detailed Modeling in Semiconductor Supply Chain Simulation*  
 Sanjay Jain, Chu Cheow Lim, Boon-Ping Gan, and Yoke-Hean Low (Gintic Institute of Manufacturing Technology)  
 [ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*Machine Dedication under Product and Process Diversity*  
 Darius Rohan (IBM Corporation)  
 [ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

### **Tuesday 8:30 a.m.–10:00 a.m.**

#### **Modeling Issues in Semiconductor Manufacturing**

Chair: Navdeep Grewal (Seagate Technology)

*Modeling Lot Routing Software through Discrete-Event Simulation*  
 Chad D. DeJong and Thomas Jefferson (Intel Corporation)  
 [ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*A Model of a 300mm Wafer Fabrication Line*  
 Phillip L. Campbell, Darius Rohan (IBM Microelectronics Division), and Edward MacNair (IBM T. J. Watson Research Center)  
 [ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*Application of Simulation and the Boehm Spiral Model in 300mm Logistics System Risk Reduction*  
 Jerry Weckman, Theron Colvin, Robert J. Gaskins (PRI Automation), and Gerald T. Mackulak (Arizona State University)  
 [ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

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## **CONSTRUCTION ENGINEERING AND PROJECT MANAGEMENT**

### **Tuesday 10:30 a.m.–12:00 noon**

#### **Simulation Applications in Construction I**

Chair: J. Martinez (Virginia Polytechnic Institute and State University)



*Construction of a Dam Embankment with Nonstationary Queues*

Photios G. Ioannou (University of Michigan)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]*Application of Simulation in Trenchless Renewal of Underground Urban Infrastructure*

Jason S. Lueke, S. Ariaratnam, and S. AbouRizk (University of Alberta)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]*Activity Scheduling in the Dynamic, Multi-Project Setting: Choosing Heuristics through Deterministic Simulation*

Robert Ash (University of Indiana Southeast)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]**Tuesday 1:30 p.m.–3:00 p.m.****Simulation Applications in Construction II**

Chair: S. AbouRizk (University of Alberta)

*Simulation of the Structural Steel Erection Process*

Anil Sawhney (Arizona State University) , Andre Mund, and Jennifer Marble (Western Michigan University)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]*Special Purpose Simulation Template for Utility Tunnel Construction*

J. Ruwanpura, S. AbouRizk, K. C. Er, and S. Fernando (University of Alberta)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]*Real World Applications of Construction Process Simulation*

Luis-Henrique Martinez and Daniel W. Halpin (Purdue University)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]**Tuesday 3:30 p.m.–5:00 p.m.****Using Simulation for Decision Support**

Chair: Anil Sawhney (Arizona State University)

*Who Serves Whom? Dynamic Resource Matching in an Activity-Scanning Simulation System*

Photios G. Ioannou (University of Michigan) and Julio C. Martinez (Virginia Polytechnic Institute and State University)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]*Product-Based Model Representation for Integrating 3-D CAD with Computer Simulation*

Jianfei Xu and S. AbouRizk (University of Alberta)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]*Travel-Time Simulation to Locate and Staff Temporary Facilities under Changing Construction Demand*

Iris Tommelein (University of California, Berkeley)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]**Wednesday 8:30 a.m.–10:00 a.m.****Construction Simulation Environments and Tools**

Chair: D. W. Halpin (Purdue University)

*Java-Based Simulation of Construction Processes Using Silk*

Anil Sawhney, Jayachandran Manickam, Andre Mund, and Jennifer Marble (Western Michigan University)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*Iconic Animation of Construction Simulation*

Jonathan Shi and H. Zhang (City University of Hong Kong)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]*Simphony: An Environment for Building Special Purpose Construction Simulation Tools*

Dany Hajjar and S. AbouRizk (University of Alberta)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]**Wednesday 10:30 a.m.–12:00 noon****Input Modeling and Decision Support**

Chair: P. G. Ioannou (University of Michigan)

*A Case Study in the Quantification of a Change in the Condition of a Highway Construction Operation*

Haldun Cor and Julio Martinez (Virginia Polytechnic Institute and State University)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]*Defining a Beta Distribution Function for Construction Simulation*

Javier Fente, Kraig Knutson, and Cliff Schexnayder (Arizona State University)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]*Developing the Statistical Parameters for Simultaneous Variation in Final Payload And Total Load Time*

Govindan Kannan, Michael C. Vorster, Julio C. Martinez (Virginia Polytechnic Institute and State University)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ][ [top](#) | [Previous WSC Programs and Papers](#) ]**MILITARY APPLICATIONS****Monday 10:30 a.m.–12:00 noon****Military Keynote Address**

Chair: Jeffrey M. Opper (MITRE Corporation)

*The Nexus of Simulation with Command and Control: What Each Community Can Offer the Other*

Dell Lunceford (U.S. Army Model and Simulation Office)

**Monday 1:30 p.m.–3:00 p.m.****Focus Paper on Distributed Simulation**

Chair: Ernest H. Page (MITRE Corporation)

*Issues in Distributed Simulation*

Richard E. Nance (Virginia Polytechnic Institute and State University)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]**Monday 3:30 p.m.–5:00 p.m.****High Level Architecture I**

Chair: David Bruce (DERA)

*Lessons Learned from the Design and Execution of a Federation for Joint Experimentation*

Anita Zabek (MITRE Corporation)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]*Experiences in the NATO Pre-Pathfinder DIMUNDS 2000 Federation*

Richard A. Briggs and Joost Hamera (Virtual Technology, Inc.)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*FEDEP V1.4: An Update to the HLA Process Model*

Robert Lutz (Johns Hopkins University Applied Physics Lab)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

**Tuesday 8:30 a.m.–10:00 a.m.**

**Military M&S I**

Chair: Curt Blais (VisiCom)

*OOTW Impact Analysis*

Dean S. Hartley, III, Richard E. Bell, and Stephen L. Packard (Oak Ridge Federal Facilities)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*Modeling Leadership Effects and Recruit Type in an Army Recruiting Station*

Edward McLarney (U.S. Air Force), J. O. Miller, Kenneth W. Bauer, Jr. (Air Force Institute of Technology), and Robert Francher, (U.S. Army Recruiting Command)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*Networked Simulation with HLA and MODSIM III*

Glen D. Johnson (CACI)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

**Tuesday 10:30 a.m.–12:00 noon**

**M&S Supported Acquisition**

Chair: John Tufarolo (MITRE Corporation)

*Simulation to Support Operational Testing: A Practical Approach*

Bradford S. Canova, Peter H. Christensen, Michael D. Lee, Bruce R. Tripp, Michael H. Pack, and David L. Pack (MITRE Corporation)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*An Example of Simulation Use in Army Weapon System Development*

Ann H. Kissell (U.S. Army Aviation and Missile Command)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*Simulation Environments for the Design and Test of an Intelligent Controller for Autonomous Underwater Vehicles*

Michael W. Roeckel, Robert H. Rivoir, Ronald E. Gibson, and Stephen P. Linder (Pennsylvania State University)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

**Tuesday 1:30 p.m.–3:00 p.m.**

**High Level Architecture II**

Chair: Richard Weatherly (MITRE Corporation)

*Automated Distributed System Testing: Designing an RTI Verification System*

John Tufarolo, Jeff Nielsen, Susan Symington, Richard Weatherly, Annette Wilson (MITRE Corporation), James Ivers (Carnegie Mellon University), and Timothy C. Hyon (TRW)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*Automated Distributed System Testing: Application of an RTI Verification System*

John Tufarolo, Jeff Nielsen, Susan Symington, Richard Weatherly, Annette Wilson (MITRE Corporation), James

Ivers (Carnegie Mellon University), and Timothy C. Hyon (TRW)  
[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*Application of the Analysis Federate in the Joint Advanced Distributed Simulation Joint Test Force Electronic Warfare Phase II Test*

William S. Murphy, Jr. (U.S. Army TRADOC Analysis Center–Monterey) and Michael L. Roane (Joint Advanced Distributed Simulation JTF)  
[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

**Tuesday 3:30 p.m.–5:00 p.m.**

**Analytical Modeling in Support of Military Operations**

Chair: Mike Frost (CORDA, Ltd.)

*The Exclusion Zone Model—A Development Methodology*

Paul Rendell and Alan Cowdale (Air Warfare Centre)  
[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*Modelling Military Requirements for Nonwarfighting Operations*

Noel Corrigan, David Frankis, and Robert Bailey (CORDA, Ltd.)  
[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*The Modeling of Tactics and Procedures Using a Component Based System*

Phillip Martin (CORDA Ltd)  
[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

**Wednesday 8:30 a.m.–10:00 a.m.**

**Advanced Modeling and Simulation Techniques**

Chair: Roger Smith (STAC, Inc.)

*Multitrajectory Simulation Performance for Varying Scenario Sizes*

John B. Gilmer, Jr. and Frederick J. Sullivan (Wilkes University)  
[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*Maneuver Warfare Distillations: Essence not Verisimilitude*

Gary E. Horne (U.S. Marine Corps Combat Development Command)  
[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*Using Adaptive Agents in Java to Simulate U.S. Air Force Pilot Retention*

Martin P. Gaupp (U.S. Air Force Personnel Operations Agency) and Raymond R. Hill (Air Force Institute of Technology)  
[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

**Wednesday 10:30 a.m.–12:00 noon**

**Military M&S II**

Chair: James Calpin (MITRE Corporation)

*TALUS - An Object Oriented Air Combat Simulation*

Sigurd Glaerum (Norwegian Defence Research Establishment)  
[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*Distributed Real-Time Simulation for Intruder Detection System Analysis*

Jeffrey S. Smith, Brett A. Peters (Texas A&M University), Sabina E. Jordan, and Mark K. Snell (Sandia National Laboratories)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*Tactical Logistics and Distribution System (TLOADS) Simulation*

David J. Parsons and L. C. Krause (Simulation Dynamics, Inc.)

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## LOGISTICS, TRANSPORTATION, & DISTRIBUTION APPLICATIONS

### Monday 10:30 a.m.–12:00 noon

#### Ground Transportation Applications I

Chair: Roger Baugher (Norfolk Southern Railroad)

*Evaluating the Potential Benefits of a Rail Traffic Planning Algorithm*

Paul M. Julich, Stephen L. Brazleton, and Daniel F. Curtis (GE-Harris Railway Electronics)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*Evaluating Strategies to Improve Railroad Performance—A System Dynamics Approach*

Jack B. Homer (Homer Consulting), Thomas E. Keane (Norbridge, Inc.), Natasha O. Lukiantseva, and Dave W. Bell (CSX Transportation)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*Parametric Modeling in Rail Capacity Planning*

Harold O. Kruger and John Prokopy (Canadian National Railroad)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

### Monday 1:30 p.m.–3:00 p.m.

#### Supply Chain Management Applications I

Chair: Gary Cross (IBM Corporation)

*CSCAT: The Compaq Supply Chain Analysis Tool*

Rick Ingalls (Compaq Computer Corporation) and Cynthia Kasales (SMC)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*Supply Chain vs. Supply Chain: Using Simulation to Compete beyond the Four Walls*

George Archibald, Nejat Karabakal, and Paul Karlsson (IBM Corporation)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*Supply Chain Strategic Planning: A Four Step Approach for Integrating Simulation and Optimization Technologies to Solve Strategic Supply Chain Planning Problems*

Donald A. Hicks (Llama-Soft)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

### Monday 3:30 p.m.–5:00 p.m.

#### Airport & Aerospace Applications I

Chair: John Carson (AutoSimulations, Inc.)

*An Aircraft Taxi Simulation Model for the United Parcel Service Louisville Air Park*

William S. Ottman, Angela C. Ford, and Gregory R. Reinhardt (UPS)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*Analysis and Simulation of Passenger Flows in an Airport Terminal*

Michel Gatersleben (Amsterdam Airport Schiphol) and Simon W. van der Weij (InControl)  
 [ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*Proactive Flight Schedule Evaluation at Delta Airlines*  
 Bruce Schumacher (Delta Airlines)  
 [ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

## **Tuesday 8:30 a.m.–10:00 a.m.**

### **Port & Maritime Applications**

Chair: Jon S. Helmick (U.S. Merchant Marine Academy)

*A Flexible Interface and Architecture of Container and Intermodal Freight Simulations*  
 Beth Kulick, and Jim Sawyer (Automation Associates)  
 [ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*Operative Requirements and Advances for the New Generation Simulators in Multimodal Container Terminals*  
 Agostino G. Bruzzone, P. Giribone, and R. Revetria (University of Genoa)  
 [ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*Logistics Issues in Autonomous Food Production Systems for Extended Duration Space Exploration*  
 Reza Naghshineh-pour, Nicole Smith, and Bala Ram (North Carolina A&T State University)  
 [ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

## **Tuesday 10:30 a.m.–12:00 noon**

### **Logistics & Distribution Applications I**

Chair: Robert Kyle (Llama-Soft)

*Sizing Industrial Rail Car Fleets Using Discrete-Event Simulation*  
 William R. Lesyna (DuPont)  
 [ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*Process & Material Handling Models Integration*  
 Michael Norman, Deron Tinsley (AutoSimulations, Inc.), Jerry Barksdale, Otto Wiersholm (Dominion Semiconductor), Philip L. Campbell, and Ed MacNair (IBM Corporation)  
 [ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*A Simulation of the Product Distribution in the Newspaper Industry*  
 Marelys L. Garcia (Lockwood Green Consulting), Martha A. Centeno, and Gabriela Penaloza (Florida International University)  
 [ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

## **Tuesday 1:30 p.m.–3:00 p.m.**

### **Ground Transportation Applications II**

Chair: Mani Manivannan (Emery Worldwide Airlines)

*Designing the Westerscheldetunnel Toll Plaza Using a Combination of Queueing and Simulation*  
 Nico M. Van Dijk, Mark D. Hermans, Maurice J. G. Teunisse (Incontrol Business Engineers), and Henk Schuurman (Dutch Ministry of Transport, Public Works and Water Management)  
 [ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*Key Factors in Road-Rail Mode Choice in India: Applying the Logistics Cost Approach*  
 Peter Cook, Sanjay Dass, Andreas Aeppli, and Carl Martland (GIS Trans)  
 [ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*Train Performance Simulation*

Paul Martin (Comreco Rail)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]**Tuesday 3:30 p.m.–5:00 p.m.****Airport & Aerospace Applications II**

Chair: Eric Miller (TransSolutions Corporation)

*Using Airspace Simulation to Assess Environmental Improvements from Free Flight and CNS/ATM Enhancements*

David K. Chin (TRW) and Fran Malone (U.S. Federal Aviation Administration)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]*Using Simulation to Choose between Rental Car Lot Layouts*

Todd Johnson (AutoSimulations, Inc.)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]*Using Simulation to Influence Foreign Policy*

Mike Carter, Mike Cramm, and Mark Grabau (U.S. Air Force)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]**Wednesday 8:30 a.m.–10:00 a.m.****Logistics & Distribution Applications II**

Chair: Jack Levis (UPS)

*Integrated Manufacturing Logistics: Byproducts Can Be Critical*

Charles H. White and Bing Wu Tsai (DuPont Engineering)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]*Scaleable Integration Model for Objective Resource Capability Evaluations (SIM-FORCE)*

Tony Gossard, Nancy Brown, and David Crippen (Kelly Logistics Support Services, Inc.)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]*A Practical Module-Based Simulation Model for Transshipment-Inventory Systems*

Soemon Takakuwa (Nagoya University) and Tsukasa Fujii (Aichi Prefectural Police Academy)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]**Wednesday 10:30 a.m.–12:00 noon****Supply Chain Management Applications II**

Chair: Gregory L. Schlegel (IBM Corporation)

*Distributed Supply Chain Simulation in a DEVS/CORBRA Execution Environment*

Doohwan Kim, Steve Buckley (IBM T. J. Watson Research Center), and Bernard Zeigler (University of Arizona)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]*Quick Response Replenishment: A Case Study*

Russell King and Kara Moon (North Carolina State University)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]*How i2 Integrates Simulation in Supply Chain Management*

Jeremy Padmos, Bill Hubbard, Tom Duczmal, and Slim Saidi (i2)

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## BUSINESS PROCESS SIMULATION

**Monday 10:30 a.m.–12:00 noon**

**Business Process Simulation I: Manufacturing and Logistics**

Chair: Steve Buckley (IBM T. J. Watson Research Center)

*Interfacing Simulation with Costing Software to Drive the Transformation from Prototype Manufacturing to High Volume Manufacturing*

Catherine Harmonosky, Jennifer L. Miller, Scott Rosen, Mark Traband, Rick Tillotson (Pennsylvania State University), and Dave Robbie (Lockheed Martin)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*BPR and Logistics: The Role of Computational Models*

Leon McGinnis (Georgia Institute of Technology)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*eSCA: A Thin-Client/Server/Web-Enabled System for Distributed Supply Chain Simulation*

Bob Chen, Oliver Bimber, Chintamani Chhatre, Elizabeth Poole, and Steve Buckley (IBM T. J. Watson Research Center)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

**Monday 1:30 p.m.–3:00 p.m.**

**Business Process Simulation II: Practice**

Chair: Randy Gibson (Automation Associates, Inc.)

*Impact of Connection Bank Redesign on Airport Gate Assignment*

Michel Turcotte, Gillian M. Mann, and Aaron L. Nsakanda (Air Canada)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*Business Process Simulation: A Fundamental Step Supporting Process Centered Engineering*

Marc Aguilar, Tankred Rautert (Banque Generale du Luxembourg, S. A.), and Lex Pater (Andersen Consulting)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*Simulation Assisted Product Development Program Planning*

Mark R. Grabau and Gregory R. Clay (Andersen Consulting)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

**Monday 3:30 p.m.–5:00 p.m.**

**Business Process Simulation III: Continuous Improvement**

Chair: David Withers (Dell Computer Company)

*The Use of Simulation in Process Reengineering Education*

Les Pang and William T. Hodson (National Defense University)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*Reconciliation of Business and Systems Modelling via Discrete Event Simulation*

George M. Giaglis (Brunel University)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*"Personnel Forecasting Strategic Workforce Planning": A Proposed Simulation Cost Modeling Methodology*

Stephen R. Parker and John A. Marriott (National Imagery and Mapping Agency)



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## FUTURE OF SIMULATION

**Tuesday 8:30 a.m.–10:00 a.m.**

### **Web-Based Simulation I**

Chair: John A. Miller (University of Georgia)

*A Hybrid Visual Environment for Models and Objects*

Paul A. Fishwick (University of Florida)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*Web-Based Simulation Visualization Using Java3D*

Chad F. Salisbury, Steven D. Farr, and Jason A. Moore (Rome Air Force Research Laboratory)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*Scenario Management for Web-Based Simulation*

Andrew F. Seila and John A. Miller (University of Georgia)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

**Tuesday 10:30 a.m.–12:00 noon**

### **Web-Based Simulation II**

Chair: K. Preston White (University of Virginia)

*Component-Based Simulation on the Web?*

Michael Pidd, N. Oses, and Ricardo A. Cassel (Lancaster University)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*Web-Based Analysis and Distributed IP*

Philip A. Wilsey (University of Cincinnati)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*VRML for Urban Visualization*

Lee Belfore (Old Dominion University)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

**Tuesday 1:30 p.m.–3:00 p.m.**

### **Emerging Elements of Simulation's Future**

Chair: Roland Mielke (Old Dominion University)

*A Global Synchronization Network for a Non-Deterministic Simulation Architecture*

March Bumble and Lee Coraor (Pennsylvania State University)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*Scaling, Hierarchical Modeling, and Reuse in an Object-Oriented Modeling and Simulation System*

Thorsten Daum and Robert G. Sargent (Syracuse University)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*Simulation in the Next Millennium*

Sanjay Jain (Gintic Institute of Manufacturing Technology)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

**Tuesday 3:30 p.m.–5:00 p.m.**

**Enterprise Wide Simulation**

Chair: Lee Belfore (Old Dominion University)

*Enterprise Simulations: Theoretical Foundations and a Practical Perspective*

Tom Mastaglio (Old Dominion University)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*Applications for Enterprise Simulation*

Roland Mielke (Old Dominion University)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*The Application of System Dynamics (SD) Simulation to Enterprise Management*

John Affeldt (Booz, Allen, and Hamilton)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

**Wednesday 8:30 a.m.–10:00 a.m.**

*What Does Industry Need from Simulation Vendors in Y2K and After? A Panel Discussion*

Chair: Jerry Banks (AutoSimulations, Inc.)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

**Wednesday 10:30 a.m.–12:00 noon**

**Future of Simulation Research**

Chair: Ernest H. Page (MITRE Corporation)

*Strategic Directions for Simulation Research (Panel)*

Osman Balci (Virginia Polytechnic Institute and State University), Paul Fishwick (University of Florida), Richard Fujimoto (Georgia Institute of Technology), Pierre L'Ecuyer (Université de Montréal), David Nicol (Dartmouth College), and Roger Smith (STAC, Inc.)

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## HEALTHCARE

**Monday 10:30 a.m.–12:00 noon**

**Healthcare I**

Chair: Adriana M. Alvarez (Florida International University)

*Simulation Modeling as an Aid to Decision-Making in Healthcare Management: The Adjuvant Breast Cancer (ABC) Trial*

Lynne P. Baldwin, Tillal Eldabi, and Ray J. Paul (Brunel University)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*Emergency Department Simulation and Determination of Optimal Attending Physician Staffing Schedules*

Manuel D. Rossetti, Gregory F. Trzcinski, and Scott A. Syverud (University of Virginia)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*The Use of Simulation for Process Improvement in a Cancer Treatment Center*

Jose A. Sepulveda, William J. Thompson, Felipe F. Baesler, and Maria I. Alvarez (University of Central Florida), and Lonnie E. Cahoon III (M. D. Anderson Cancer Center)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

**Monday 1:30 p.m.–3:00 p.m.****Healthcare II**

Chair: Julie C. Lowery (VA Center for Practice Management and Outcomes Research)

*GERMS: An Epidemiologic Simulation Tool for Studying Geographic and Social Effects on Infection Transmission*

Andrew L. Adams, James S. Koopman, Stephen E. Chick, and Peter J. Yu (University of Michigan)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]*Simulating Outpatient Obstetrical Units*

Mark W. Isken (Oakland University), Timothy J. Ward, and Timothy C. McKee (Health Services Engineering, Inc.)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]*The Benefits of Simulation Modeling in Medical Planning and Medical Design*

Victor Lange (PROMODEL Corporation)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]**Monday 3:30 p.m.–5:00 p.m.****Healthcare III**

Chair: Gabriela Penaloza (Florida International University)

*Determination of Operating Room Requirements Using Simulation*

Julie C. Lowery and Jennifer A. Davis (VA Center for Practice Management and Outcomes Research)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]*Dynamic Simulation Modeling of ICU Bed Availability*

William Cahill, Marta Render (VA Medical Center and University of Cincinnati)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]*Healthcare Simulation: A Case Study at a Local Clinic*

Mark L. Weng and Ali A. Houshmand (University of Cincinnati)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ][ [top](#) | [Previous WSC Programs and Papers](#) ]**SPECIAL-FOCUS PRESENTATIONS II****Tuesday 8:30 a.m.–10:00 a.m.****Recent Advances in Web-Based Simulation and High Level Architecture**

Chair: Arnold H. Buss (Naval Postgraduate School)

*A Widely Deployable Web-Based Network Simulation Framework Using CORBA IDL-Based APIs*

Arjun Cholkar (GTE Data Services) and Philip Koopman (Carnegie Mellon University)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]*The High Level Architecture: Is There a Better Way?*

Wayne J. Davis (University of Illinois at Urbana–Champaign) and Gerald L. Moeller (U.S. Army Material Systems Analysis Activity)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]*On-Line Data Processing in Simulation Models: New Approaches and Possibilities through HLA*

Thomas Schulze, Steffen Strassburger (Otto-von-Guericke-Universität Magdeburg), and Ulrich Klein

(Fraunhofer Institute for Factory Operation and Automation)  
[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

**Tuesday 10:30 a.m.–12:00 noon****Recent Advances in Parallel and Distributed Simulation**

Chair: Michael Sly (Logistics Management Institute)

*Optimistic Parallel Simulation over a Network of Workstations*  
Reuben Pasquini and Vernon Rego (Purdue University)  
[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*Web-Based Performance Visualization of Distributed Discrete Event Simulations*  
Adel S. Elmaghraby, Sherif Elfayoumy, Irfan Karachiwala, James H. Graham, Ahmed Emam, and AlaaEldin Sleem (University of Louisville)  
[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*The Effect of State-Saving in Optimistic Simulation on a Cache-Coherent Non-Uniform Memory Access Architecture*  
Christopher D. Carothers (Rensselaer Polytechnic Institute), Kalyan S. Perumalla, and Richard M. Fujimoto (Georgia Institute of Technology)  
[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

**Tuesday 1:30 p.m.–3:00 p.m.****Call Center Modeling**

Chair: Khaled Mabrouk (The Model Builders)

*Decision Support for Call Center Management Using Simulation*  
Rupesh Chokshi (AT&T Labs)  
[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*Call Center Simulation in Bell Canada*  
Oryal Tanir and Rick Booth (Bell Canada)  
[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*Simulation of a Claims Call Center: A Success and a Failure*  
Roger Klungle (AAA of Michigan)  
[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

**Tuesday 3:30 p.m.–5:00 p.m.****Recent Advances in Conditional Monte Carlo**

Chair: James R. Wilson (North Carolina State University)

*Computing the Distribution Function of a Conditional Expectation via Monte Carlo: Discrete Conditioning Spaces*  
Shing-Hoi Lee (Morgan Stanley Dean Witter and Co.) and Peter W. Glynn (Stanford University)  
[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*The Phantom SPA Method: An Inventory Problem Revisited*  
Felisa J. Vázquez-Abad and Manuel Cepeda-Hüberman (Université de Montréal)  
[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

**Wednesday 8:30 a.m.–10:00 a.m.****Innovative Applications**

Chair: David Ward (Rolands and Associates Corporation)

*Estimating Ambulance Requirements in Auckland, New Zealand*

Shane G. Henderson and Andrew J. Mason (University of Auckland)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*Simulating the Economic Viability of Crawfish Production: A Two-Stage Approach*

Amy C. Hasegawa, Conrado M. Gempesaw II (University of Delaware), William H. Daniels, and Bernard R. Petrosky (Delaware State University)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*A Simulation Approach for Improving the Efficiency of the Department of Motor Vehicles*

Brian Senkandwa and Yasser Dessouky (San Jose State University)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

**Wednesday 10:30 a.m.–12:00 noon**

**Recent Advances in Simulation Practice**

Chair: Rochelle N. Price (PROMODEL Corporation)

*Enhancing Simulation Models for Emergency Rooms Using VBA*

Adriana M. Alvarez and Martha A. Centeno (Florida International University)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*Case Study: Simulation of the Call Center Environment for Comparing Competing Call Routing Technologies for Business Case ROI Projection*

Katherine Miller (IIT Research Institute) and Vivek Bapat (Systems Modeling Corporation)

[ [Abstract](#) | [Full Paper \(pdf format\)](#) ]

*Three Sources of Simulation Inaccuracy (and How to Overcome Them)*

Stewart Robinson (University of Warwick)

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*Simulation:  
Mission Critical*  
**December 4-7, 2005**



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## WSC Past Conferences

### The Winter Simulation Conferences Dates, Locations, Leaders and Attendance

Below we give information concerning the history of the Winter Simulation Conference. For the periods 1967-1968 and 1974-1995, the attendance figures shown below represent total paid attendance including students, but excluding exhibits-only registrants. For the period 1969-1973, no surviving records of WSC attendance are held by any of the sponsoring societies; consequently, attendance estimates were obtained by discussions with the Program Chairs and General Chairs for this period – namely, Harold Hixson, Julian Reitman, Arnold Ockene, Philip Kiviat, Michael Araten, Joseph Sussman, Austin Hoggatt, and Michael Morris. Although the figures for the years 1969-1973 are subject to uncertainty, there is little doubt that in the period 1970-1971, attendance at the WSC was substantially higher than in all other years. In the following table, the abbreviations GC, PC, APC, PE, PCE, and APE denote General Chair, Program Chair, Associate Program Chair, *Proceedings* Editor, *Proceedings* Co-Editor, and Associate *Proceedings* Editor, respectively.

	Conference	Conference Leaders	Attendance
1	Conference on the Applications of Simulation Using GPSS 13-14 November 1967 Hilton Hotel, New York, NY	Harold G. Hixson (GC) Julian Reitman (PC)	401
2	Second Conference on the Applications of Simulation 2-4 December 1968 Hotel Roosevelt, New York, NY	Julian Reitman (GC) Arnold Ockene (PC)	856
3	Third Conference on the Applications of Simulation 8-10 December 1969 International Hotel, Los Angeles, CA	Arnold Ockene (GC) Philip J. Kiviat (PC)	400
4	Fourth Conference on the Applications of Simulation 9-11 December 1970 Waldorf-Astoria Hotel, New York, NY	Philip J. Kiviat (GC) Michael Araten (PC)	1100
5	The 1971 Winter Simulation Conference 8-10 December 1971 Waldorf-Astoria Hotel, New York, NY	Michael Araten (GC) Joseph Sussman (PC)	1200
6	The 1973 Winter Simulation Conference 17-19 January 1973 St. Francis Hotel, San Francisco, CA	Joseph Sussman (GC) Austin C. Hoggatt (PC)	600
7	The 1974 Winter Simulation Conference 14-16 January 1974 Washington Hilton Hotel, Washington, DC	Michael F. Morris (GC) Harold Steinberg (PC) Harold J. Highland (PE)	463
8	The 1976 Bicentennial Winter Simulation Conference 6-8 December 1976 National Bureau of Standards, Gaithersburg, MD	Harold J. Highland (GC) Thomas J. Schriber (PC) Robert G. Sargent (APC)	306
9	The 1977 Winter Simulation Conference	Robert G. Sargent (GC)	465

	5-7 December 1977 National Bureau of Standards, Gaithersburg, MD	J. William Schmidt (PC) Harold J. Highland (PE)	
10	The 1978 Winter Simulation Conference 4-6 December 1978 The Deauville Hotel, Miami Beach, FL	Larry G. Hull (GC) Norman R. Nielsen (PC) Harold J. Highland (PE)	388
11	The 1979 Winter Simulation Conference 3-5 December 1979 Holiday Inn Embarcadero, San Diego, CA	Mitchell G. Spiegel (GC) Robert Shannon (PC) Harold J. Highland (PE)	375
12	The 1980 Winter Simulation Conference 3-5 December 1980 Orlando Marriott, Orlando, FL	Paul Roth (GC) Tuncer I. Ören (PC, PE) Charles M. Shub (APC)	205
13	The 1981 Winter Simulation Conference 9-11 December 1981 Peachtree Plaza Hotel, Atlanta, GA	Claude M. Delfosse (GC) Charles M. Shub (PC) Tuncer I. Ören (PE)	267
14	The 1982 Winter Simulation Conference 6-8 December 1982 Holiday Inn Embarcadero, San Diego, CA	Yen W. Chao (GC) Orlando Madrigal (PC) Harold J. Highland (PE)	274
15	The 1983 Winter Simulation Conference 12-14 December 1983 Crystal Gateway Marriott Hotel, Arlington, VA	Jerry Banks (GC) Bruce W. Schmeiser (PC) Stephen D. Roberts (PE)	416
16	The 1984 Winter Simulation Conference 28-30 November 1984 Sheraton Dallas Hotel, Dallas, TX	Udo W. Pooch (GC) C. Dennis Pegden (PC) Sallie Sheppard (PE)	350
17	The 1985 Winter Simulation Conference 11-13 December 1985 San Francisco Hilton and Tower, San Francisco, CA	Gerard C. Blais (GC) Susan L. Solomon (PC) Donald T. Gantz (PE)	369
18	The 1986 Winter Simulation Conference 8-10 December 1986 Radisson Mark Plaza Hotel, Washington, DC	James O. Henriksen (GC) Stephen D. Roberts (PC) James R. Wilson (PE)	531
19	The 1987 Winter Simulation Conference 14-16 December 1987 The Ritz Carlton, Buckhead, Atlanta, GA	Hank Grant (GC) W. David Kelton (PC) Arne Thesen (PE)	475
20	The 1988 Winter Simulation Conference 12-14 December 1988 San Diego Marriott, San Diego, CA	Peter L. Haigh (GC) John C. Comfort (PC) Michael A. Abrams (PE)	535
21	The 1989 Winter Simulation Conference 4-6 December 1989 Capital Hilton Hotel, Washington, DC	Kenneth J. Musselman (GC) Philip Heidelberger (PC) Edward A. MacNair (PE)	619
22	The 1990 Winter Simulation Conference 9-12 December 1990 The Fairmont Hotel, New Orleans, LA	Randall P. Sadowski (GC) Richard E. Nance (PC) Osman Balci (PE)	517
23	The 1991 Winter Simulation Conference 8-11 December 1991 The Arizona Biltmore, Phoenix, AZ	W. David Kelton (GC) Gordon M. Clark (PC) Barry L. Nelson (PE)	540
24	The 1992 Winter Simulation Conference 13-16 December 1992 Crystal Gateway Marriott Hotel, Arlington, VA	Robert C. Crain (GC) James R. Wilson (PC) James J. Swain (PE) David Goldsman (APE)	734
25	The 1993 Winter Simulation Conference 12-15 December 1993 The Biltmore Hotel, Los Angeles, CA	Edward C. Russell (GC) William E. Biles (PC) Gerald W. Evans (PE) Mansoor Mollaghasemi (APE)	572

26	The 1994 Winter Simulation Conference 11-14 December 1994 Walt Disney World Swan Hotel, Orlando, FL	Deborah A. Sadowski (GC) Andrew F. Seila (PC) Jeffrey D. Tew (PCE) S. Manivannan (PCE)	667
27	The 1995 Winter Simulation Conference 3-6 December 1995 Hyatt Regency Crystal City, Arlington, VA	William R. Lilegdon (GC) David Goldsman (PC) Christos Alexopoulos (PCE) Keebom Kang (PCE)	652
28	The 1996 Winter Simulation Conference 8-11 December 1996 Hotel Del Coronado, Coronado, CA	Daniel T. Brunner (GC) James J. Swain (PC) John M. Charnes (PCE) Douglas J. Morrice (PCE)	649
29	The 1997 Winter Simulation Conference 7-10 December 1997 Renaissance Waverly Hotel, Atlanta, GA	David H. Withers (GC) Barry L. Nelson (PC) Sigrún Andradóttir (PE) Kevin J. Healy (APE)	634
30	The 1998 Winter Simulation Conference 13-16 December 1998 Grand Hyatt Washington, Washington DC	John S. Carson (GC) Mani S. Manivannan (PC) D. J. Medeiros (PCE) Edward F. Watson (PCE)	778
31	The 1999 Winter Simulation Conference 5 – 8 December 1999 Squaw Peak, Phoenix, AZ	David T. Sturrock (GC) Gerald W. Evans (PC) P. A. Farrington (PCE) H. B. Nemhard (PCE)	671
32	The 2000 Winter Simulation Conference 10-13 December 2000 Wyndham Palace Resort & Spa, Orlando, FL	Paul A. Fishwick (GC) Keebom Kang (PC) Jeffrey A. Joines (PCE) Russell R. Barton (PCE)	710
33	The 2001 Winter Simulation Conference 9-12 December 2001 Crystal Gateway Marriott, Arlington, VA	Matt Rohrer (GC) Deb Medeiros (PC) Brett A. Peters (PCE) Jeffrey Smith (PCE)	496
34	The 2002 Winter Simulation Conference 8-11 December 2002 Manchester Grand Hyatt San Diego, San Diego, CA	Jane L. Snowdon (GC) John M. Charnes (PC) Enver Yücesan (PCE) Chun-Hung Chen (PCE)	556
35	The 2003 Winter Simulation Conference 7-10 December 2003 The Fairmont New Orleans, New Orleans, LA	David Ferrin (GC) Douglas J. Morrice (PC) Paul J. Sanchez (PCE) Stephen Chick (PCE)	562
36	The 2004 Winter Simulation Conference 5-8 December 2004 Washington Hilton and Towers Washington, D.C.	Jeff Smith (GC) Brett Peters (PC) Ricki G. Ingalls (PCE) Manuel D. Rossetti (PCE)	689

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## **Time Tracking Policy**

### **Description**

The time tracking policy describes the expectations for employees required to track their time on projects and other activities.

### **Expectations**

All affected parties are required to track their time in the TimeWizard tool weekly. The expectations are:

- People learn how to use the TimeWizard tool appropriately. They should contact their manager for training or any questions with using the tool.
- Time sheets are filled out daily.
- All approvals must be complete the following Monday.
- Accurate recording of the task and the hours spent on the task occurs.

Additional Manager responsibilities:

- Getting the tasks into the TimeWizard tool prior to the start of work by:
  - Creating project plans from the template while ensuring accuracy of activities, capitalization information and task assignments.
  - Obtaining approval from the Integration manager on the plans.
  - Working with the TimeWizard administrator to get the plans imported into the tool.
- Approving employee time sheets weekly the following Monday.

### **Affected Parties**

Bradley Company employees and consultants in the Development & Implementation Organization are required to track their time.

[Link to Policy List](#)

# Time Tracking Q & A

## Document Review and Approval

VP, Software Development & Implementation

Teresa Light \_\_\_\_\_

## Document Revision History

Created 8-3-99 PF Created document with questions and answers

1. I spent 5 minutes on a task. How should I report it? A. If the 5 minute task was unrelated to any other activity, just include the time in the task you were working on. We request that you use 15 minute increments for time reporting. This would be entered as .25 in TimeWizard.
2. My supervisor assigned me the task of reading a book. Where do I report it? A. It depends on what the book is for. So the focus is more on why the reading was assigned, more than what you were doing, in this case reading. If the book is a training manual or a description of Developing User Interfaces, Requirements Based Testing or Object Oriented Design, it would be counted as Training/Conferences. If the task is listed on the project plan for your department and you were assigned that task, then the task should automatically appear on your time sheet in TimeWizard. If the task was not on the project plan, then you can pick the Project Type of 'Activity' and select 'Training/Conferences'.
3. My department had a meeting. Where do I report the time? A. There could be several places to report the time, based on the purpose of the meeting. Again, the focus is why were you meeting, not that you were meeting. If you were meeting for lunch to talk about life, you wouldn't report any of the time since lunch is on your own. If the meeting were to discuss project statuses and assign which projects should be worked on next, you can charge it to the Activity of 'Project Tracking & Oversight.' If the meeting were to go over your Performance Evaluation, you would charge it to the activity of HR - 'Human Resources'. If the meeting were a company-wide meeting where John was talking about goals or something, it would go to the General Activity of 'General Office'. If the meeting was for training on a new process to follow to improve our development it would be charged to the Activity of SPI - 'Software Process Improvement.'
4. I was working on a task in preparation for the User's Conference. Where do I charge it? Since one of the primary functions of the User Conference is to train our clients and help them with issues, preparation for the User Conference should be tracked under the activity of 'Support'. When we attend the User Conference in September, the time should be tracked as 'Training/Conferences', unless you are doing a presentation, in which case it should be listed as 'Support'.
5. I entered time, and the next time I came in it was gone. Usually, when this happens, the time has been tracked in the wrong period. Be careful when you first go into TimeWizard for the period is highlight. You may be changing periods rather than moving in your timesheet.

6. Where should I put icon work? Creating icon for our application should be place under code/unit test.
7. I what TimeWizard categories these should be in.
8. Creating instructions to create builds. ( I put it into Quality Engineering) packaging
9. build and CD for Berkshire special program (I charged this to Packaging, but could be support) packaging
10. build and CD for Standard Register. Jeff took with him, so he could have a copy while he moved printlink server to new hardware. (I charged this to packaging) packaging
11. Build and CD burn for Royal (I charged this to Packaging)packaging
12. DTC Build and CD (I charged this to Sales support) why, are they a live client. What was the CD for?
13. I entered a comment into one of my time cells. When I went back into the timesheet the comment wasn't there. Make sure after you add a comment to a cell that you tab out of that cell before you save, close or leave that timesheets. If you don't tab out of the cell, even if you have applied the comment, it doesn't seem to be saved.
14. As a manager I enter and edit transaction note to be able to add a note to a cell of someone else's timesheet. I enter a transaction note into the cell, but when I return to the timesheet the note has been changed to the first edit transaction note.

(This is the answer from ACS) This behavior does occur in this version of TimeWizard. I have added it to our issue tracking database for resolution in the next release. I have a workaround that will work in the mean time. Each time you want to edit a time entry and add a unique note for the entries, you must enter the note in the read-only / edit area, edit the time entries and then exit that persons timesheet. You must do this for each entry you want to add a unique note to.

A couple of weeks ago, Ken and I asked you questions about things happen after the design/spec phase is done.

We start the whole project in proposal/requirement.

We put time on **Sales Support**.

Then, we start the Design/Spec after the approval.

We put time on **Requirement Management**.

Then, we move the process to development and start Peer Review.

We put time on **Peer Review**.

Then, we fix spec from the result of the Peer Review.

You told Ken and I to put time on **Peer Review**.

Errors or rework generated from a peer review is tracked under the original task.

If the task was a proposal, it goes under sales support, if the task was

Requirements management, the rework goes under requirements management.

If the task was coding, after a peer review, the rework would be tracked under coding.

Then, development starts and developers ask questions or ask for a minor change on spec.

We put time on (Development) **Support**.

Time making changes or clarification to a spec is still Requirements

Management.

Support is client support and only client support. Support becomes part of the Maintenance rollup for accounting reports. Requirements, sales support, etc become part of the Research&Design category on accounting reports. They need to be kept separate.

Then, things move to Quality and testers ask questions.

We put time on **Support**.

Time making changes or clarification to a spec is still Requirements Management.

Is there anything wrong about the way we put our time on TimeWizard like these?

15.

## Bradley Company Process Improvement Status

### Overall Process Improvements

1. Drafted 1999 SPI milestones. Review currently in process.
2. Selected 3 critical business problems to focus on resolving with Process Improvements.
3. Selected tools and developed processes for establishing automated testing of the product and increasing the coverage of system testing.
4. Improved engineering quality by the inspection of project design documents.

### Requirements Management

1. Selected and purchased the tool 'Caliber' to manage change to requirements.
2. Trained staff on Requirements Based Testing and Writing Testable Requirements.
3. Initial requirements processes are being developed.
4. Created and implemented a Content Management process for the selection, prioritization, and estimation of requirements to be included in a Software Development Plan.
5. Expanded the Engineering team to increase the capacity to handle the recorded requirements.
6. Process definition for closed loop defect tracking 90% complete. Portions under pilot.

### Software Project Planning

1. Trained staff in Project Planning, estimation techniques and Risk identification and mitigation.
2. Standardized all project plans to be created in MS Project 98 with actual resources being assigned specific tasks.
3. Created Project Plans for tracking systems engineering, development, documentation and quality assurance.
4. Adjusted the Engineering and Development teams to handle the priority requirements selected for each release.
5. Transitioned from parallel engineering and development to a waterfall life cycle development process.

# **Bradley Company Process Improvement Status**

(continued)

## **Software Project Tracking & Oversight**

1. Team managers were trained and made responsible to create project plans and track actual data in the project plans.
2. Established weekly tracking meetings to spotlight progress to senior management and facilitate communication between project teams. Corrective actions are taken as necessary.
3. Selected, purchased and initiated installation of the TimeWizard tool to automate Level of Effort tracking and provide complete auditability of actual work data.

## **Software Quality Assurance**

1. Identified key personnel who will be involved in the SQA activities.

## **Software Configuration Management**

1. Trained staff in Configuration Management and Change control.
2. Selected tools to evaluate for the resolutions of current Configuration Management issues.
3. Identified key personnel who will be responsible for configuration management.

## **Software Subcontract Management**

1. Identified personnel who will be responsible for Subcontract management.
2. Identified potential Subcontractor's who have the essential abilities needed to supplement Bradley Company software development.
3. Process definition for Factory 2 content and capacity planning 70% complete. Portions under pilot.

## Exhibit 3

**From:** "Terry Light"  
**Sent:** [REDACTED]  
**To:** "Dave Podnar"; "Phil Foell"; "Randy Reetz"; "Greg Kanzinger"; "Chou Richard"; "Ken Andrews"; "Joe Foell"; "Peggy Koontz"; "Darlene McFadden"  
**Subject:** Where are we going with Planning and Process Improvement Short Term?  
**Follow Up Flag:** Follow up  
**Due By:** [REDACTED]  
**Flag Status:** Flagged

Some people are wondering what the next steps are with planning and process improvement activities. This email is for communication purposes so everyone is informed both of what is going on and also with some of the rationale as to why certain decisions were made. Please feel free to talk to your people or forward this to them so they are informed as well.

If anyone has any questions, please send me a private email or call prior to 9:45 am on Friday at 440-708-0527. The plan is to be back in the office next Thursday. Please wish me luck in the meetings with our Xerox management next week. Best wishes to all for a great memorial day weekend.

## Where are going with the Plans?

Goal # 1A: Complete the 2.2x "B" level plans and obtain approval.

The high level Excel spreadsheets must correlate with the "B" level plans pretty close to perfectly. Why? Because schedules slip one day at a time. To go approve a plan that is flawed is just moving the problem to later in the delivery phase. Second reason is that numbers that do not align suggest credibility problems to some people of the whole document. And, there are other reasons, one being that I will not be at peace with "A"/ "B" level numbers that do not match.

Today we found what appears to be some minor, resolvable discrepancies in the "A" level documents for 1999. Phil and Peggy agreed to fix the documents (outlook completion Friday afternoon). At that time, the Design and Development "B" level plans may or may not need to be modified to correlate perfectly. If they do, please update them promptly.

Joe's plan for the affected months needs to be inspected to ensure the numbers match the "A" level documents and that the finish dates align with the Development plan start dates. The project format is not important at this time.

Once the Design (Greg and Joe) and Development plans both align with the "A" level documents, then Randy and the "back end" people should modify or complete their documents. (Chou and team are not affected by 2.2x).

It is desirable to get the Responsibility and Assumptions high level document updated (Phil's action).

Please email me these documents for inspection as appropriate (and please keep the network updated with the latest versions).

Goal # 1B: Take 2.2x baselines and restart weekly Integration meetings with rigor.

Goal # 2: Complete the 2.3x "B" level plans. Complete a 2.3 Software Development Plan. Obtain approval.

Good news. For those of us struggling with Project (me too), Lynn is planning to be here the entire week of June 7th. Goals are to help people learn more about MS Project as requested, come to consensus on a common format (and view for Terry), actually complete the 2.3 "B" level plans, and to complete an inspection to ensure correlation with the "A" level and integration between departments. Maybe we can even get an SDP complete.

## Where are going with Process Improvement ?

Our # 1 goal is to complete the Defect Management (Darlene lead) and Special Program (Peggy lead) process definition currently underway.

The reason for prioritizing the Special Program subset of the Content Planning process is simply that we are trying to increase revenue for Bradley Company this year. The new process will increase bid turnaround time, the effectiveness and efficiency in which we collect the real client requirements providing them with cost tradeoffs as appropriate, enables capacity planning enough in advance so we can make commitments at bid time and meet them, and enables us to justify increasing capacity as needed to accommodate additional revenue making opportunities. As we pilot pieces of the new processes, we are already seeing improvements in profitability. Right now our processes are limiting our revenue potential, not the client demand. Another reason this is tied for number one is that some other problems go away as a side effect.

Once the Special Program process is piloted and proven, the plan is to attempt to improve it further by including affected parties other than the Design Managers in the scoping process. Our challenge will be to implement a process modification while maintaining the key components of the initial process that are resulting in increased revenue, like bid turnaround time. The decision to delay this improvement was carefully thought out. If anyone wants to understand the rationale, please see me privately.

After those two processes are defined, the Content Planning Process (completion goal is prior to the 2.4 planning cycle) and Change Management Processes rise to the top of the list. This is not to say that the departmental processes, like those that ensure that the right information is on CDs, are not important and should not be worked in parallel.



As projects are completed, the Factory 2 demand & Forecast worksheet will be updated with Actual data, both actual times and actual dates. *OWNED BY INTEGRATION MGR, UPDATED BY INTEGRATION STAFF*

As changes occur to Factory 2 Demand & forecast worksheet, notes will be attached to each cell to indicate who made the change, when the change was made and the reason for the changes.

There should only be one factory 2 plan. There is no need to add the Factory 2 tasks to the Spectrum Plus and PrintLink project plans. The design leaders are allocated 50% to their own plan, 20% to Factory 2 plans, 10% special projects, 20% standard overhead. The design leaders will just look at both project plans to determine what tasks to work on in a given week/day.

*2.2X  
PLANNING  
ASSUMPTION*

#### Goals

*MAKE MANAGEMENT DECISIONS BASED ON FACTS*

To allocate resources

Get visibility of status

Predict dates

Answer customer questions about delivery

Manage costs

Better planned overtime, reduced overtime

Reduced stress

Better timing of hiring

Meeting customer commitments

*PRIORITIES BASED ON BUSINESS NEEDS*

#### How to

How should a project plan be named

Where should it be located

What fields are displayed and used

When should a new plan be created

When should a re-plan occur

How do we handle the continuous change of the Factory 2 commitments

When do we set and change baselines?

How do we use resource pooling?

How do we produce A-Level plans

What constitutes an A-level document

How do you tell which project goes on which plan

How do you report by month

How do you report by release

How do you balance a plan

How and when do you enter actual data?

How do we tie project plans to TimeWizard

*For 2.30*

*PROJECT FLOW CHARTS*

#### Files & Reports

A level plan

Balanced detailed plans by release (or by release and department?)

Planned vs actual hours by task

*A LEVEL KEY ARTIFACTS, 51 RISKS & ASSUMPTIONS*

*THE KEY ARTIFACTS SHOULD BE VERIFIED.*

## Development Lifecycle

Bradley will follow a modified waterfall development methodology in which each of the main tasks has some overlap with the previous task. We will use these main tasks - (Planning) Design, Development, Quality, and Packaging. (INCLUDING TESTING, DOCUMENTATION & PACKAGING)

We will build a separate project plan file for each department - Planning, Design, Development, Quality, and Packaging - for each release. All Special Programs projects will be maintained in one project file. At the end of each quarter, uncompleted Special Programs tasks will be copied to the Special Programs project file for the next quarter. Is this for design only? Each of these files will be baselined and added to the rollup reporting for that release as the plan becomes available.

The department manager is the plan owner and is responsible for creating and updating the plan for their department. In case no department manager has been named, individual team leaders are the plan owners, and are responsible to create and maintain the plans. Resource allocation and sharing are the responsibility of the plan owner. Synchronization and coordination between plans is the responsibility of the Integration Manager.

INTEGRATION (INCLUDES PLANNING, DESIGN, DEVELOPMENT, TESTING, DOCUMENTATION & PACKAGING)  
LESSONS LEARNED

PLANNING  
NEED TO VISIT  
DESIGN  
SPECIAL FILES  
PLANNING

UPON RELEASE MONTHLY  
REVIEW UP MONTHLY  
BASELINE QUARTERLY

IN THE CASE OF SPECIAL PROJECTS THE DES OR MANAGERS  
ARE JOINTLY RESPONSIBLE FOR THE CREATION & UPDATES  
TO THE PLAN.

# DESIGN SUPPLY SHEET

	May	June	July	August	September	October	November	December	Total
Spectrum Plus Total	275.5	208.8	156.0	78.0	0.0	0.0	0.0	0.0	718.3
PrintLink Total	129.3	172.4	172.4	133.3	166.7	0.0	0.0	0.0	774.1
Factory 2 Client Total	64.0	202.0	128.0	120.0	80.0	80.0	0.0	0.0	674.0
Factory 2 Prospect Total	0.0	40.0	104.0	120.0	200.0	104.0	80.0	40.0	688.0
Factory 2 Client - Chou	0.0	22.8	20.8	24.0	16.0	16.0	0.0	0.0	99.6
Factory 2 Client - Greg	12.8	9.6	4.8	0.0	0.0	0.0	0.0	0.0	27.2
Factory 2 Client - Darlene		40.0							
Greg - Spectrum Plus	96.4	73.1	49.9	22.6	0.0	0.0	0.0	0.0	242.0
Greg - Factory 2 Client	12.8	9.6	4.8	0.0	0.0	0.0	0.0	0.0	27.2
Greg's Total Demand	109.2	82.7	54.7	22.6	0.0	0.0	0.0	0.0	269.2
Greg's Total - Supply	119.0	119.0	119.0	119.0	119.0	119.0	119.0	119.0	952.0
Surplus/Gap	9.8	36.3	64.3	96.4	119.0	119.0	119.0	119.0	682.8
Chou - PrintLink	58.2	77.6	77.6	60.0	75.0	0.0	0.0	0.0	348.3
Chou - Factory 2 Client	0.0	22.8	20.8	24.0	16.0	16.0	0.0	0.0	99.6
Chou's Total Demand	58.2	100.4	98.4	84.0	91.0	16.0	0.0	0.0	447.9
Chou's Total Supply	119.0	119.0	119.0	119.0	119.0	119.0	119.0	119.0	952.0
Surplus/Gap	60.8	18.6	20.6	35.0	28.0	103.0	119.0	119.0	504.1
Joe - Factory 2 Client	51.2	129.6	102.4	96.0	64.0	64.0	0.0	0.0	507.2
Joe's Total Demand	51.2	129.6	102.4	96.0	64.0	64.0	0.0	0.0	507.2
Joe's Total Supply	122.4	122.4	122.4	122.4	122.4	122.4	122.4	122.4	979.2
Surplus/Gap	71.2	-7.2	20.0	26.4	58.4	58.4	122.4	122.4	472.0
Status	OK	Problem OT corrects	OK	OK	OK	OK	OK	OK	

# Factory 2 Demand and Forecast

Factory 2 Demand and Orders																								
Client	Balance Plan	Design Lead	Res Writer	Type	Estimate Status	Special Programs Name	May		June		July		August		Sep		Oct		Nov		Dec		Total	
							Desn	Cde	Desn	Cde	Desn	Cde	Desn	Cde	Desn	Cde	Desn	Cde	Desn	Cde	Desn	Cde		
Standard Register		Chou	Joe	Client	Pre-Bid	Billing System Interface Smartworks							80	80									160	
		Chou	Joe	Client	Pre-Bid	Order entry Prism Interface - current phase system									80	80		80	80				160	
		Chou	Joe	Client	Pre-Bid													80	80				160	
State of Louisiana			Pre-Sale	Prospect		Oil Upload							24	24									48	
						Total Design:	64		242		232		240		280		184		80		40		1362	
						Total Code:		56		112		368		248		280			200		120		160	
						Total New Prospects:			40		104		120		168		200		120		80	120	40	2906
						Total Client Requested:	64	56	202	112	128	368	120	80	80	160	80	80						
						Yearly Total Prospect	888	888																
						Yearly total Client	674	856																
						Chou Clients			114		104		120		80		80						488	
						Greg Clients	64		48		24												136	
						Unplanned			40														40	
						Darlene																	674	

## Factor 2 Demand and Forecast

Factory Z Demand and Forecast							May	June	July	August	Sept	Oct	Nov	Dec	Total		
Client	Release Date	Desktop Lead	Req Number	Type	Proc Line Status	Special Processing Name	Dsn	Cde	Dsn	Cde	Dsn	Cde	Dsn	Cde	Dsn	Cde	Total
BOSS IL	2.2x Qmg	Greg	Joe	Client	Cancelled	Changes to SP's for M&M Company											112
	2.2x Qmg	Greg	Joe	Client	Development	PeopleSoft Interface	64		48								160
Bartshire		Chou	Joe	Client	Pre-Bid	EDI			40		40						80
BMA				Prospect	Pre-Sale	VPS Mainframe					40						80
Carasco	2.2x Qmg	Chou	Joe	Client	Pre-Bid	EDI Import Program (import vendor asset tags on PC purchases)			40		40						160
DTC - Phase 1		Chou	Corbin	Client	In Development	GL Upload to Excel		56									56
DTC - Phase 2	2.2x Qmg	Chou	Joe	Client	Approved	Shipping Change Import DHL			42	64							106
DTC - Phase 2	2.2x Qmg	Chou	Joe	Client	Approved	Shipping Change Import UPS			32		48						80
Final Colony				Prospect	Pre-Sale	GL Upload					24	24					48
Guardian	2.2x Qmg	Greg	Joe	Client	Pre-Bid	Receipt Variance PO Change & Invoice Payment				24	32						56
				Client	Pre-Bid				48		64						112
Helix				Prospect	Pre-Sale	Catalog Synchronization							24	24			48
Lincoln National				Prospect	Pre-Sale	GL Upload							16	16			32
				Prospect	Pre-Sale	APP Upload							16	16			32
MDOT	2.2x	Darlana		Client	Pre-Bid	FAST			40		120						160
Milani Systems	2.2x Qmg	Chou	Ken	Client	Pre-Bid	Req Import				24	24						48
Northland			Ken	Prospect	Pre-Bid	PrintLink changes for PC DOCS			40		40						160
Royal Insurance				Prospect	Pre-Sale	Autome Interface				32							64
				Prospect	Pre-Sale	Pitney Bowes Interface				32							64
Royal Bank of Canada				Prospect	Pre-Sale	Catalog Synchronization			40		40						160
				Prospect	Pre-Sale	Order Transfers				16			24				80
				Prospect	Pre-Sale	Order Acknowledgements					40		40				160
				Prospect	Pre-Sale	Inventory Updates							40				160
				Prospect	Pre-Sale	Address Synchronization							40				160
				Prospect	Pre-Sale	3rd party Integration							40		40		180

# Release 2.2x Planned Content

Defect ID	Planned Release	Company Name	Task Name	Design Estimate	Coding Estimate	Steps	Assumptions
41712.21		BCBS IL	4171-PO print option to ship cancelled items	3.2	8	It was brought to my attention that at times they will cancel a line item on a PO but it still prints on the PO. They would like that line item to not print. Blue Cross Blue Shield Need to add segment_value_1 (Cost Center) to the PO print form	4/7/99 The line item along with a message that says it was cancelled prints. This could probably be controlled by adding a configuration setting.
42422.21		BCBS IL	4242-better printing of Account Codes on PO	3.2	8	they only want the cost center to appear, not all the segments, and definitely not listed vertically on the po, it takes to much room. Greg will ask them whether	4/20/99 Greg phoned BCIL to get the OK on this fix and is awaiting a reply.
42512.21		BCBS IL	4251-enter primary user name (not ID)	3.2	28	Blue Cross Blue Shield needs to have the ability to enter in the Primary User and Secondary User names without entering in the person_xl. Any questions about this can be directed towards Greg. This has been promised for the June/July Release for 1999.	
42522.21		BCBS IL	4252-Auto Receive standardization	0	12	Blue Cross Blue Shield would like the ability to use the Auto Receive column on the PO to determine whether or not an item can be received at time of Invoice Matching. Please see Greg for an details. This has been promised for the June/July Release for 1999. BCBS IL needs a special program to interface with Peoplesoft.	This is actually described as a defect in the system but is to be coded for the BCBS delivery
99992.21		misc	New Priority Defects	48	30	AP Upload - modify the upload	
5052.25		Utah State Tax	0505-Serial Number feature	589.2	528	Serial number enhancement (without KAs, the KAs portion was opened as enhancement 4577) PERCENT is a reserved word in SQL Server 7.0. need to modify the jobs tables so that the field names use the standard name format of pct_%.x.	research-80 hours to determine what is done and is needed design-2 people 4 weeks, 320 design assume that we do not change the po to specify which serial numbers are ordered. assume that this does not cover printing dynamic data on PrintLink items.
45682.25		Internal	4568-SQL 7.0 changes to jobs	0	80	the pick ticket procedure needs to be documented.	
45692.25		Internal	4569-Pick Ticket documentation project	16	80	the purpose is to have sufficient documentation of the process and the various scenarios that need to be tested so that complete test plans can be created and automated.	
		Totals		642.8	755		

**Bradley Company 1999 Supply-Demand Summary**

<b>Design Supply</b>								
Defects								
Spectrum Plus	275.4	275.4	302.6	329.8	329.8	329.8	329.8	329.8
PrintLink/DocuPM	161.5	187.0	187.0	187.0	187.0	187.0	187.0	187.0
Factory 2	190.4	190.4	190.4	190.4	190.4	190.4	190.4	190.4
<b>Design Demand</b>								
Defects				45.0				
Spectrum Plus	275.5	208.8	156.0	78.0				
PrintLink/DocuPM	129.3	172.4	172.4	133.3	166.7			
Factory 2-current	64.0	202.0	128.0	120.0	80.0	80.0	0.0	0.0
Factory 2-prospect	0.0	40.0	104.0	120.0	200.0	104.0	80.0	40.0
<b>Design Gap</b>								
Defects	0.0	0.0	0.0	-45.0	0.0	0.0	0.0	0.0
Spectrum Plus	-0.1	66.6	146.6	251.8	329.8	329.8	329.8	329.8
PrintLink/DocuPM	32.2	14.6	14.6	53.7	20.3	187.0	187.0	187.0
Factory 2	126.4	-51.6	-41.6	-49.6	-89.6	6.4	110.4	150.4
Design Total Gap	158.5	29.6	119.6	210.9	260.5	523.2	627.2	667.2
Design Gap (minus prospects)	158.5	69.6	223.6	330.9	460.5	627.2	707.2	707.2
<b>Development Supply</b>								
Defects								
Spectrum Plus	312.0	376.6	357.9	247.4	247.4	246.5	246.5	246.5
PrintLink/DocuPM	38.3	17.0	55.3	187.0	187.0	210.8	210.8	210.8
Factory 2	85.0	85.0	95.2	95.2	95.2	105.4	105.4	105.4
<b>Development Demand</b>								
Defects	117.4	167.4	177.4	137.4	127.4	110.0		
Spectrum Plus	251.7	251.7	251.7	178.0	178.0			
PrintLink/DocuPM				184.0	188.0	221.0	221.0	
Factory 2-current	56.0	112.0	368.0	80.0	160.0	80.0	0.0	0.0
Factory 2-prospect	0.0	0.0	0.0	168.0	120.0	120.0	120.0	160.0
<b>Development Gap</b>								
Defects	-117.4	-167.4	-177.4	-137.4	-127.4	-110.0	0.0	0.0
Spectrum Plus	60.3	124.9	106.2	69.4	69.4	246.5	246.5	246.5
PrintLink/DocuPM	38.3	17.0	55.3	3.0	-1.0	-10.2	-10.2	210.8
Factory 2	29.0	-27.0	-272.8	-152.8	-184.8	-94.6	-14.6	-54.6
Development Total Gap	10.1	-52.5	-288.8	-217.9	-243.9	31.7	221.7	402.7
Dev Gap (minus prospects)	10.1	-52.5	-288.8	-49.9	-123.9	151.7	341.7	562.7
Dev Gap (with 6/7-7/31 Cons) (and 6/28 hire)	10.1	12.5	1.2	80.1	6.1	281.7	471.7	692.7

# Tracking Plan Creation Procedure

Exhibit 4

## Document Review and Approval

VP, Software Development & Implementation  
Integration Manager

Teresa Light  
Phil Foell

\_\_\_\_\_  
\_\_\_\_\_

## Document Revision History

\_\_\_\_\_

## Plan Creation

1. First ensure that you have the current service pack for MS Project. Go to the Help – About window. (as of [REDACTED] version should read: Microsoft Project 98 SR-1)
2. Begin all work on a new plan by opening the MS Project plan template (j:\schedule\project template.mpp). This template has fields, views and resources created in a way to standardize and optimize the project plans. This template has some macro's that are being developed to help automate the entry and validation of the required fields.
3. Save the project plan to the appropriate directory (usually j:\schedule\<release number>) and project name (e.g. Design, Development, Quality.) and change the File Properties Title field to have your project name. The change the footer to show the correct path name.
4. Entry Views. Select the view that will enable you to enter tasks easily and quickly. View 1 is suggested since all the relevant fields will be added. An alternative is to use view 2 and enter all the fields we have set up in the past, then switch to view 3 and enter all the new fields required to integrated with TimeWizard. There are 4 special views that have been developed to assist with the creation and tracking of Bradley Company development projects. These project views show up as menu buttons on the left side of the screen. 1) BC Entry-The view is a concatenation of view 2 and 3. The fields in this view are Task Name, Resource Names, Work, Start, Finish, Type, Content, Activity, Customer, and Capitalization. (The last 5 fields have to do with the integration with TimeWizard and the categorization of tasks.) 2) BC Entry Gantt is similar to the basic Gantt Chart view that comes originally with Project. It contains the above fields without the TimeWizard components. The fields in this view are Task Name, Resource Names, Work, Start, Finish, Successors, and Predecessors. 3) BC TimeWizard Integration has the fields displayed that are imported into TimeWizard. The fields in this view are Task Name, Resource Names, Type, Content, Activity, Customer, Application, and Capitalization. 4) BC Tracking-This view is used once the plan is baselined. This is the view that should be printed out and brought to the weekly integration meeting. The fields in this view are Task Name, % Complete, % Work, Baseline Work, Work, Actual Work, Baseline Start, Start, Finish, and Resource Names.

Please do not change these views by inserting or hiding fields. If you wish to add fields or hide fields, please switch to the Gantt Chart view first and then add or hide the fields you wish to see.



5. Begin entering Tasks and organizing work components. It is suggested that you create a milestone at the top of your project called xxx project begins. This should be the only task on your project that has a specific date entered, all the other tasks should be linked through the use of the predecessor field.
6. Resources. The project template has all the people in Terry's Team listed as resources. Please use the DropDownList in the Resource Names field to ensure you use the same spelling for each person. A generic name for each team is also listed to maintain consistency. If you have not already determined which Resource will be working on a plan, it is suggested that you use the generic name. Since the Resource and Work are linked internally in Project, if you enter the work first and the resource later, the resource will be assigned at a high percent allocation rate in order for the work hours to be accomplished in one day. Entering the dummy name up front and then changing it to the real resource can eliminate this peculiarity of MS Project.
7. The Content field will be used to create reports that include all the tasks that were done to finish a project. It is important that the Content Number be entered on all tasks that occur within a project. The only exceptions are:
  - Sales Support* – any time invested in a project up until the customer has approved the bid is not tracked by the Content number. Once the Enhancement process moves it from a Request to Approved, any additional requirements discovery, design, development, testing or packaging needs to track the task using the content number.
  - Peer Reviews* – Peer review time is tracked separately for peer reviews and is not broken out by content number.
  - Inspections* – Inspection time is tracked separately and is not combined with the time worked on the content number.
  - Defect Analysis/Resolution/Testing* – any time fixing defects in that specific Content Number that occurs post-phase
8. Activity Charge Account – Every detail task on the project plan should have a valid Activity Charge Account. No rollup or summary tasks are imported into TimeWizard, so the detail task needs to have the correct Activity Charge Account.

**From:** "Terry Light"  
**Sent:** [REDACTED]  
**To:** "Chou Richard"; "Greg Kanzinger"; "Randy Reetz"; "Mark Little"; "Phil Foell"; "Dave Podnar"; "Chou Richard"  
**Cc:** "Terry Light"  
**Subject:** Draft Release Content Planning Process

Everyone, given below is the draft of the Release Content Planning Process that Randy and I plan to work on this week in preparation for planning our first year 2000 release. Please review it and feedback any comments to both Randy and I (today please).

Thank you.

### Release Content Planning Process

- o Quality Engineering Manager inspects and manages Support Logix data to ensure that all pending content call tickets are processed. He / she exports the content database to Excel.
- o Integration Manager and Software Development & Implementation Manager ensure that the "A" level Supply / Demand documents are current. They analysis the data and prepare a document with guidelines as to the number of Design and Development hours to select for the upcoming Release. Included in the document are instructions (what to do, desired completion date). The information is emailed to the Product Planning Manager, the President, and the Support Manager.
- o Taking into consideration the Supply hours provided, the Product Planning Manager, working with others as appropriate, provides a prioritization for the content as follows:
  - A: Highest priority for the Release
  - B: Important for the Release but acceptable to postpone
  - C: Postpone
  - D: Cancel (never Develop)
- o Upon request, affected parties will add estimates or provide additional information on the estimates. Support Logix is updated with any new information by the affected party.
- o The Product Planning manager updates Support Logix with the final prioritization and any notes. Admin assistance is provided upon request.
- o The Integration department analyzes the information, using an Excel export if needed. He / she produces a list of planned content that is considered mandatory. Decision factors include: the length of the release cycle (not to exceed 5 months plus 1 month for Quality) and pieces of content that it makes sense to develop together. The "A" level documents are updated.
- o The Integration department prepares / distributes a Content list to include in the Software Development Document. He / she updates Support Logix to change the state of the content to Scheduled. He / she distributes the content list plus the "A" level documents to the affected parties.
- o Go to Software Development Plan Creation Process

**From:** Phil Foell  
**Sent:** [REDACTED]  
**To:** Peggy Koontz; Darlene McFadden; Junhai Guo  
**Subject:** FW: DocuShare goal's and requirements

Here are the introductory goals for the docushare implementation.  
Darlene will work on modifying this note into a requirements document, like we did for TimeTracking. The requirements will be placed in bradpe3\fs j:\bradley asset library\requirements\

Peggy, please start this week on a list of documents and the current location of all of them.

thanks

-----Original Message-----

**From:** Terry Light  
**Sent:** [REDACTED]  
**To:** Phil Foell  
**Cc:** Terry Light  
**Subject:** RE: DocuShare goal's and requirements

The goals are simple:

Phase 1:

Implement a process asset library where the following key documents are managed with the appropriate security:

- "A" level documents (all of them)
- Approved processes
- Customer proposals and estimates that support them. Customer project plans.
- Key implementation documents (hardware guidelines, team roster, PrintLink steps...Peggy will list them for my review)

Initial access is for my people who need direct access to these documents on a regular basis (direct reports, SPI team, Rich, project leaders on Implementation). Other people can get access through their manager until we go to phase 2.

If there is an IM problem, then we will limit access even further or put some customer files/databases to CD. Hopefully we can find enough space to get 12 to 15 people up holding these limited number of documents.

Phase 2:

Evaluate expansion into other areas of the Company including the Sales department.

With regards to the actual documents, please ask Peggy and Darlene to propose a list that we can discuss. Thank you.

Is this acceptable for the goals? They are designed to start small to target a specific problem area of the business.

Terry

From: Terry Light  
 Sent: [REDACTED]  
 To: Phil Foell; Peggy Koontz; Dave Podnar  
 Cc: Greg Kanzinger; Terry Light; Chou Richard  
 Subject: RE: Greg's Team A Level Balance

Phil,  
 Sounds like you and Peggy have a good plan to wrap up the deployment.

The goals are as follows:

- 1) department heads to work with Peggy to "own their numbers"
- 2) we are "always be in balance" so we can accurately and rapidly make / meet commitments.
- 3) strategy changes, or a deviation from the intent, requires discussion from me if people are taking time from other buckets like Peer Reviews or SPI. This is because there is an organizational goals for the amount of time spent across the Company. It doesn't mean we won't ever do that. We may increase one area and decrease another. It just means that we need to look at the "big picture" if we want to change a strategic area.

As Dave would say, "be one with the numbers".

If there is an issue in balance, then Peggy and the department heads should have some guidelines as to when to involve me to help with tradeoffs or adding resources, renegotiating commitments due to changes, etc.

Terry

-----Original Message-----

From: Phil Foell  
 To: Terry Light; Peggy Koontz; Dave Podnar  
 Cc: Greg Kanzinger  
 Subject: RE: Greg's Team A Level Balance

Hi all,  
 I just went over the factory 2 worksheets with Peggy to show her how the negative numbers show up.  
 The revised worksheets were designed to show negative numbers when someone is over committed in a month. When this occurs, it should be an indication to Dave, Chou and Greg that the factory 2 plan is undergoing changes. In the future, when adding a task, Peggy will work to ensure all the numbers are positive before saving and closing the new factory 2 task. She may need input from one of the managers on juggling projects if the client request has a firm delivery date.  
 We will be working over the next few weeks to document how the factory 2 worksheets are updated and what imbalance situations look like and how they should be resolved.

-----Original Message-----

From: Terry Light  
 Sent: [REDACTED]  
 To: Phil Foell; Peggy Koontz; Dave Podnar  
 Cc: Terry Light

## Factory 2 Definitions

**Planned** = Signed Off

**Reserved** = Reserved  
(Probability is very high that it will be signed off that we are agreed w/ the customer to reserve time in the production schedule). *Put this question in the process somewhere.*

**High Potential** = The customer request it. It is in process. There is on going activity occurring.

**Low Potential** = No activity happening. Bid is about to expire.

**Sales Forecast** = New

# Time Tracking Report Requirements

Exhibit 9

## Document Review and Approval

VP, Software Development & Implementation  
Integration Manager

Teresa Light  
Phil Foell

\_\_\_\_\_  
\_\_\_\_\_

## Document Revision History

[REDACTED]

Created with initial information gathered from TL.

Database name TWizard  
Login Id=TWUSER  
Password=TWUSER

## General Requirements

The reports will use a standard header and footer, they should match the font size, layout and position of the headers and footers used in the Spectrum Plus Purchase Order Audit report.

The TimeWizard reports will be created in a separate InfoMaker library.

The reports will be created in InfoMaker and produced into an EXE that will be loaded on at least Peg's, Terry's, and Phil's computer.

The daily, weekly and monthly reports will be saved as PSR files that could be viewed by anyone in the company using the ReportShare product.

The Infomaker library, the EXE and the saved PSR's will all have a specified location on a server. (possibly on the PE8 server)

The monitoring reports should have some ability to change the sort order. They should normally be sorted by project, activity and task. But the sort should be able to be changed to task, activity, project or activity, task, project. In other words, there should be limited information in detail header and summary rows and a preference for all data fields to be at the same level in the detail band.

There may be a need to have 2 infomaker libraries, one for common reports and one for admin or authorized use only.

## Reporting Requirements

### **1. Software Process Improvement (SPI) Report**

The goal of this report is to inspect that sufficient resources are allocated to SPI and to drive departmental accountability to the SPI initiatives. It contains the total of number of hours spent by each department on SPI along with the percentage of total time for that department. An organizational summary for all people affected by the Time Tracking Policy should be included at the bottom of the report. It should be produced weekly as well as monthly.

### **2. Sales Support Report**

The goal of this report is to inspect the amount of resources consumed to obtain sales. It is by person, includes the time spent on the Sales Support Activity Charge Code and a percentage of that person's total time spent on this activity. An organizational summary for all people listed on the report should be included at the bottom of the report. It should be produced monthly.

### **3. Capitalization Reports – needed for use in Pilot**

The capitalization report is a replacement for the one currently provided to Xerox at the end of the month. The report designer should attempt to recreate the current report to it's "original intent" and ensure that the report can be exported to Excel and edited. Terry Light will negotiate with the Xerox controller once a sample is available as to its acceptability as a replacement of the existing report. This report should be reproduced with minimal manual intervention by the Bradley Admin organization. The only portion of the existing report that will not be generated in the new report is the extended value of the hours invested for Capitalization. Since calculating the extended value requires access to individuals wage information, management or the accounting staff will fill in the extended value then transmit the actual report via email to Xerox.

### **4. Project Financial Report**

The goal of the Project Financial report is to measure the cost of core Application development. This report is also targeted to monitor estimating accuracy within the Design and Development departments. It is a summary of estimated hours and actual hours spent on each of the core Applications. It should include cost of quality (rework) hours, which is any time charged to the Defect Analysis/Resolution/Testing Activity Charge Account. This report should list all Applications that were charged time during that month/period. It should include whether or not we are over or below are estimates and the percent deviation between the estimate and actual time.

### **5. Content Financial Report**

This report is produced for only a specific Content Tracking Number. It should include whether or not we are over or below are estimates and the percent deviation between the estimate and actual time. The report should show all Activity Charge Accounts that had time tracked against them and be sorted by department. The total estimated time, total actual time and total percent deviation should also be displayed for all Activities that reference that Content Tracking Number. This report should look in all Project Types for the specific Content Tracking Number. This report should also provide the information necessary to fill out the Xerox Goals table (reference Addendum A).

#### **6. Cost of Quality Report**

The goal of this report is to summarize the number of hours and associated cost attributed to reworking defects that persist beyond the phase the bug was introduced. This is a one-page report that shows by department the time spent on Defects. The report can be created so that it displays activity for a given month/period. If feasible, the report could show the Departments listed in one direction and the months listed in the other so that a year-to-date analysis can occur.

#### **7. Activity Charge Report**

The monthly Activity Charge report provides a summary of time spent on each of the Activity Charge Accounts by department with an organizational summary. It enables managers to inspect if sufficient resources are allocated appropriately among the activities. It is produced on demand by each Department manager as an aid in determining assumptions for future project plan development.

#### **8. Vacation / Sick Time Report**

The intent of this report is to enable Bradley Company to inspect and manage vacation and sick time entitlements per the Company benefits program. This on-demand report is by person and shows vacation/ sick time used. Managers are only authorized to access this report for their respective departments. The person responsible for Bradley Company HR has access to this report for all people affected by the time tracking system.

#### **9. Time Tracking Deployment Inspection Reports – needed for use in Pilot**

The goal of these reports is to inspect that the system is being administered and used as intended by the Company as defined by these requirements. The reports will be used to monitor Task Description terminology and to ensure tasks are charged to the correct Activity. The following reports are required on demand for inspection purposes.

- Full listing of tasks with projects and activities shown as “headers” to inspect that we are not capturing unapproved information as defined by the Bradley Company policy and requirements contained within this document.
- Full list of time charged to each task in a similar format to the above broken down by department.
- The goal of the capitalization reports is to inspect the accuracy of the information provided in our financial reports and to automate the financial report sent to Xerox each month. One report shows the detailed information. It is a list of tasks where time is tracked that are identified as capitalized tasks with the people’s names provided for reference. It is to be designed so total hours per person cannot be extracted from the report. This report will be used to verify the accuracy of the summary report provided to Xerox. This report is produced weekly.



Roles and Responsibilities	
Everyone	Follow all processes correctly. Run reports at correct times.
Users	Accurately fill out timesheet by due date. Report missing tasks to manager for the work being done.
Department Heads	Accuracy of classifying time spent, ie. Don't charge functional work to SPI. Get a task added if none exists for the work being done. Correctly categorize each task at time of adding a new task
Design Managers	Inform Department Heads and TimeWizard System Administrator of which tasks should be capitalized.
System Administrator	Verify correct categorization when adding a new task.
Design & Dev. Mgrs.	Create and send Xerox Goals Report.
Accounting Department	Send Capitalization Report to Xerox.

# Time Wizard Pilot Program

Name	Pilot	Manager OK	Training OK
Alex	OK	Dave	OK
Bryan	OK	Dave	OK
Chet	OK	Dave	OK
Dave	OK	Dave	OK
Jerry	OK	Dave	OK
Shampra	OK	Dave	OK
Anh	Out 7/26 – 7/30	Randy	On Vacation
Joanne	OK	Randy	OK
Kristen	OK	Randy	OK
Patricia	OK	Randy	OK
Peg	Out 7/26 – 7/30	Randy	OK
Theresa	OK	Randy	OK
Randy	OK	Randy	OK
Brian	OK	Greg	OK
Greg	OK	Greg	OK
Jim	Out 7/26 – 7/30	Greg	OK
Qing	OK	Greg	OK
Joe	OK	Greg/Chou	OK
Ken	OK	Chou	OK
Chou	OK	Chou	OK
Darlene	Out 7/26 – 7/30	Phil	OK
Joel		Phil	
Junhai		Phil	
Peggy	@ SR 7/19 – 7/23	Phil	@ SR 7/19 – 7/23
Phil		Phil	
Terry Light			

## Updating from MS Project to TimeWizard

1. Start TimeWizard administrator on Peg's computer. Login in as Twadmin with password bendar or Pzitzner with password password
2. To Open this interface use the to barrel (our Pipeline symbol)



3. Double click Microsoft Project Retrieve.

ID	Interface Type	Application Name	Interval	Last Date	Next Date	Last Status	Log File
4	Databridge	TWDBRID1	<None>	00/00/00	00/00/00		
5	Exception Processor	TWEXP	<None>	07/02/99	00/00/00	Successful	\\bradpe8\TimeWizard\explog
2	Microsoft Project Ret	TWMSPRET	<None>	07/22/99	00/00/00	Errors	\\bradpe8\TimeWizard\msprojlog
3	Microsoft Project Upd	TWMSPUPT	<None>	07/01/99	00/00/00	Successful	\\bradpe8\TimeWizard\msprojlog
6	Table Retrievals	Get_activities	<None>	07/22/99	00/00/00	Successful	\\bradpe8\TimeWizard\tablelog
7	Table Retrievals	Get_emp	<None>	07/22/99	00/00/00	Successful	\\bradpe8\TimeWizard\tablelog

4. You have a choice of different filter to use:

Microsoft Project Retrieve ProjectLink Options

Database | Data Mapping | Retrieval Options

☒ Refresh existing activities

☒ Initialize actual hours for in-progress

Assignment Type: Employee and Generic Assignment

☒ Exclude activities without work

Range: Activities where PS within 30 days

<All Activities>

Activities where PS within 30 days

Custom Filter

Preview...

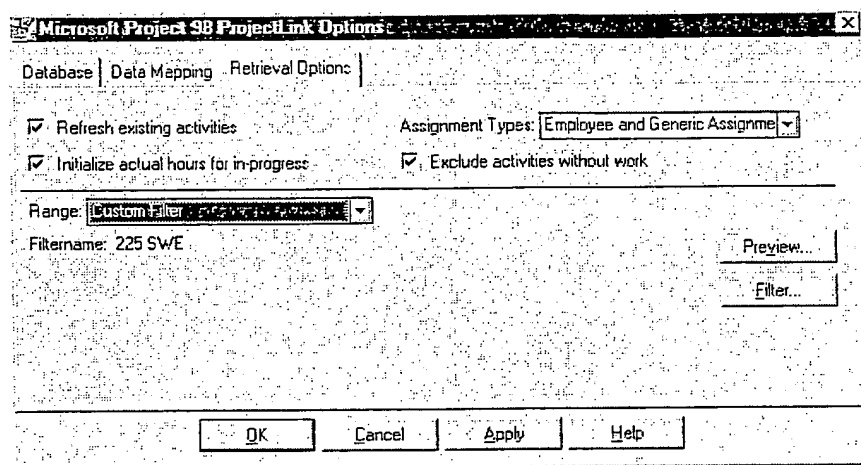
OK Cancel Apply Help

- <All Activities> with this filter you will get all activities updated from all projects plans in the Msdata database.
- Activities where PS within 30 days. You will get activities from all projects plans in the Msdata whose start date are within the number of days in the box.
- Custom Filter will give you the files that fulfill the filter chosen.

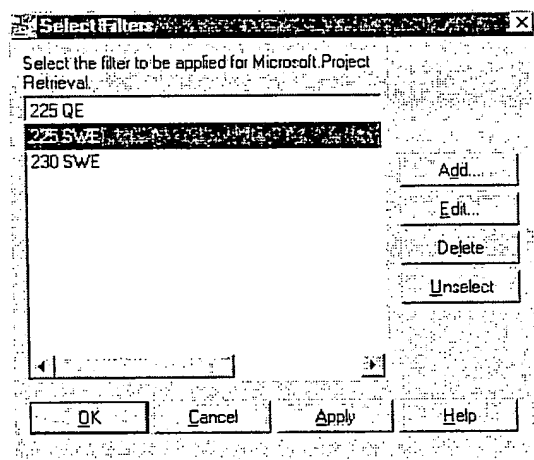
### Current Custom Filters

225 QE will give you all of the activities in the 225 QE project plan  
 225 SWE will give you all of the activities in the 225 SWE project plan  
 230 SWE will give you all of the activities in the 230 SWE project plan

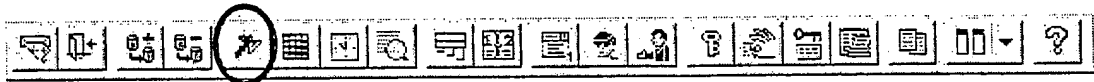
- ❖ To choose one of this filters select *Custom Filter* in the **Range:** box



- ❖ Click the **Filter...** button.
- ❖ Highlight the filter you want to use, and then click the **Apply** and **OK** button.

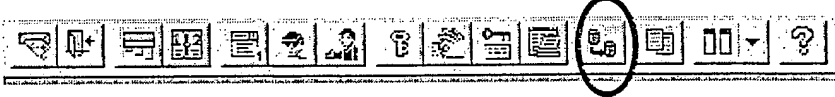


- When you return to the Microsoft Project 98 ProjectLink Options dialog box, if you want to **P**review... what will be retrieved, click the **P**review... button. (This preview may not mean too much to you)
  - When you have the filter you want, click the **A**pply and **O**K button.
5. To run the update make sure click Microsoft Project Retrieve is highlighted and double-click the hatchet.



# Updating from MS Project to TimeWizard

1. Start TimeWizard administrator on Peg's computer. Login in as Twadmin with password bendar or Pzitzner with password password
2. To Open this interface use the to barrel (our Pipeline symbol)



3. Double click Microsoft Project Retrieve.

ID	Interface Type	Application Name	Interval	Last Date	Next Date	Last Status	Log File
4	Databridge	TWDBRID1	<None>	00/00/00	00/00/00		
5	Exception Processor	TWEXP	<None>	07/02/99	00/00/00	Successful	\\bradpe8\Twizard\uncplo
2	Microsoft Project Ret	TWMSPRET	<None>	07/22/99	00/00/00	Errors	\\bradpe8\Twizard\uncplo
3	Microsoft Project Upd	TWMSPUPD	<None>	07/01/99	00/00/00	Successful	\\bradpe8\Twizard\uncplo
6	Table Retrievals	Get_activities	<None>	07/22/99	00/00/00	Successful	\\bradpe8\Twizard\vetlog
7	Table Retrievals	Get_emp	<None>	07/22/99	00/00/00	Successful	\\bradpe8\Twizard\vetlog

4. You have a choice of different filter to use:

Microsoft Project Link Options

Database | Data Mapping | Retrieval Options

☒ Refresh existing activities      Assignment Types: Employee and Generic Assignme

☒ Initialize actual hours for in-progress      ☒ Exclude activities without work

Range: Activities where PS within 30 days

<All Activities>

Activities where PS within 30 days

Custom Filter

Preview...

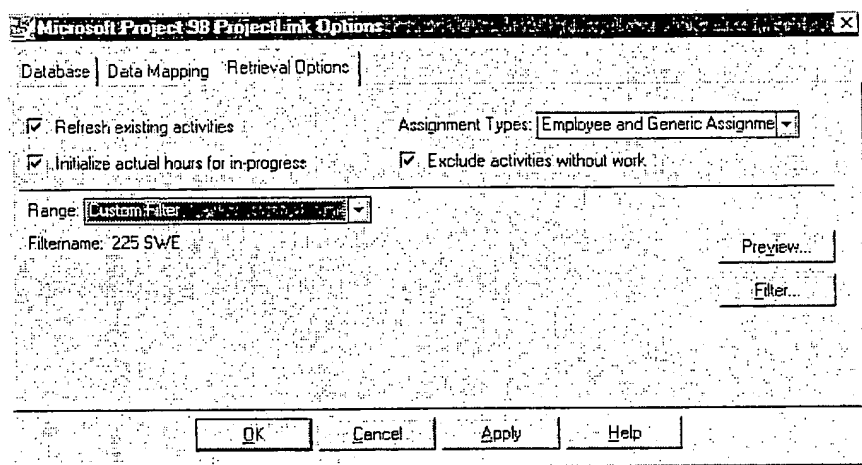
OK Cancel Apply Help

- <All Activities> with this filter you will get all activities updated from all projects plans in the Msdata database.
- Activities where PS within 30 days. You will get activities from all projects plans in the Msdata whose start date are within the number of days in the box.
- Custom Filter will give you the files that fulfill the filter chosen.

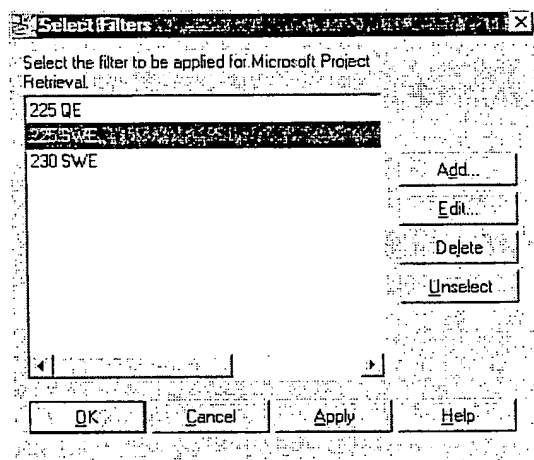
## Current Custom Filters

225 QE will give you all of the activities in the 225 QE project plan  
 225 SWE will give you all of the activities in the 225 SWE project plan  
 230 SWE will give you all of the activities in the 230 SWE project plan

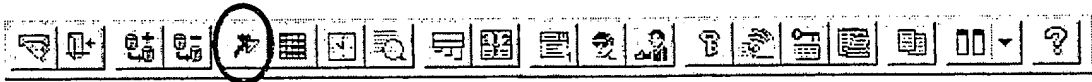
- ❖ To choose one of this filters select *Custom Filter* in the Range: box



- ❖ Click the Filter... button.
- ❖ Highlight the filter you want to use, and then click the Apply and OK button.



- When you return too the Microsoft Project 98 ProjectLink Options dialog box, if you want to **P**review... what will be retrieved, click the **P**review... button. (This preview may not mean too much to you)
  - . When you have the filter you want, click the **A**pply and **O**K button.
5. To run the update make sure click Microsoft Project Retrieve is highlighted and double-click the hatchet.



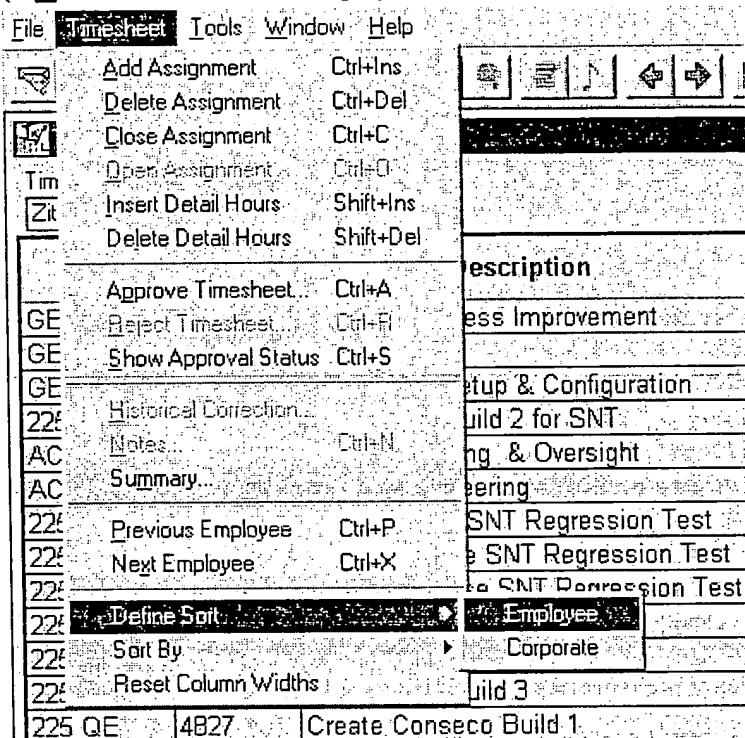
## Defining an Employee Sort

An employee sort allows the user to define the order their assignments will be displayed on their timesheet.

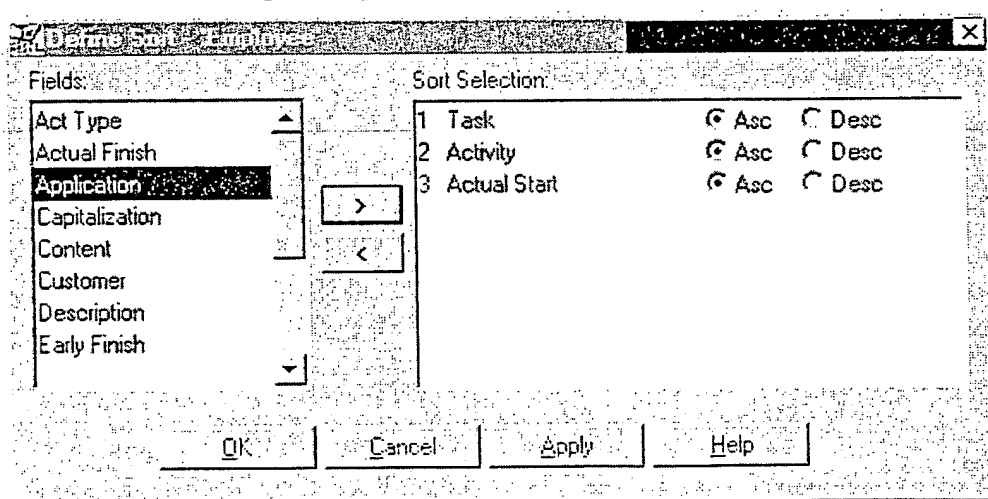
### To Define an Employee Sort

1. Select "Define Sort/Employee" from the Timesheet menu to open the Employee Sort dialog box.

(Timesheet> Define Sort> Employee)

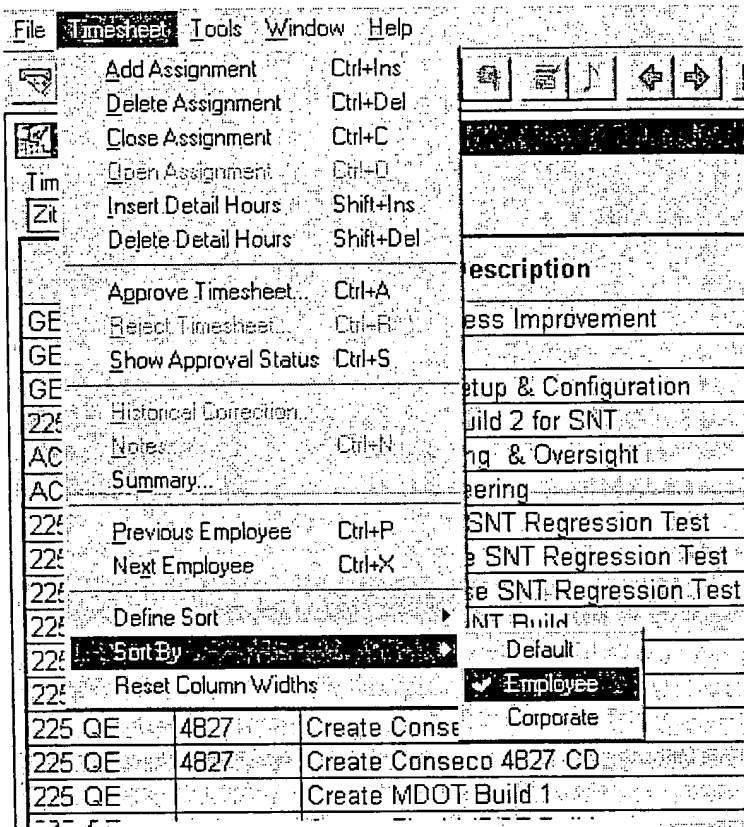


The left side of the dialog box displays a list of possible field names on which to sort.



2. Select the primary field you want to sort on by clicking on the fieldname and then the ">" symbol to move it over into the sort selection box. (Or double-click the fieldname and it will move over.)
3. Each fieldname can be sorted in ascending or descending order by clicking the desired radio button.
4. Continue moving any other desired fieldnames over in the same manner.
5. Click the **OK** button to exit the dialog box.

To view your timesheet in the sort order you have defined, click on "Sort By/Employee" from the **Timesheet** menu. Your timesheet refreshes to display the sort order you have defined. Your sort definition is saved by TimeWizard and can be changed at any time





## TimeWizard implementation meeting

### Requirements

See attached Categorization.

Projects are a role up of activities. Check to be sure that the Total Projects number is exactly the same as the total activities number.

### Goals

- enable management reports for me so decision making can be more fact based and timelier (cost rollups on projects, amount of time truly spent on SPI versus functional work are just two examples)
- enable accurate tracking of historical information against estimates, so data is useful and easily accessible to all affected people
- replace the capitalization sheets and provide reports for me to inspect the accuracy of our reporting
- enable the type of level of effort tracking necessary to comply with the agreement between Mike Laird and myself without generating work for people
- enable achievement of CMM Level 2 key practices and processes

### Notes

Everything should have a tracking number

### Projects

Spectrum Plus

SPI –review processes, creation. Putting the activity in place the first time

Doing the activities are not SPI

If debugging reveals it is not a defect, but a training issue, it should be listed as customer support not defect report handling. If debugging reveals it is an enhancement, it would be listed as requirements discovery

Need to resolve

How to resolve issues and track them within the phase. It is just part of the initial code

Requirements discovery is a subset of requirements management  
Requirements discovery has 2 components, 1 for cost of sales, 1 for future enhancements

Phase II

Set up implementation team

Break out software engineering as a level 3 activity broken out.

Project = design or development on the product

Activity =

As soon as a call ticket becomes a content, then it transfers from being an activity to a project.

Requirements discovery – sending a bid on 3 reports  
Add the original goals.

Special programs should be broken out for quality engineering.

Create a requirements document  
Review with randy, dave, and greg

MDOT is a special program, it is not broken out as a separate project.

Implementation notes

Once a plan is imported, you should not change the content text field, because it will show up as a new activity in timewizard.

There are five goals:

1- enable management reports for me so decision making can be more fact based and timelier (cost rollups on projects, amount of time truly spent on SPI versus functional work are just two examples)

Find out early in the cycle that we are making money or losing money on a project. Make it possible to track all time on a project.

Reduce labor and improve accuracy of time tracking and reporting.

How much does each project cost us, including enhancements, and defects.

How much money do we spend each month on defects, or enhancements.

Manage cost of sales by project

Position the company to take advantage of increased revenue opportunities through management of cost, customer expectations and change. And achievement of the Xerox goals/investor requirements.

2- enable the type of level of effort tracking necessary to comply with the agreement between Mike Laird and myself without generating work for people

3- replace the capitalization sheets and provide reports for me to inspect the accuracy of our reporting (to increase accuracy and ensure full capitalization of work, secondly to reduce rework from having 2 systems)

4- enable achievement of CMM Level 2 key practices and processes. We will only achieve level 2 if we spend time on it. Not functional activities (rebalancing plans, peer reviews, daily time entry), but SPI. (defining the peer review process, all process definition related to SPI are counted, setup time of tool and implementation, defining and creating reports) The use of any tool would not be SPI, but the implementation would count as SPI.

Sub goals- inspect amount of time spent on SPI

Ensure Time tracking is not a barrier to time (specify who has access to a workers total hours)

5- enable accurate tracking of historical information against estimates, so data is useful and easily accessible to all affected people. Ensure integration with planning.

Feed back results to improve bidding estimates.

Manage resources

Other

Capture vacation/personal days and sick days

Maintain high customer satisfaction, Manage customer expectations better, being able to communicate

need to use the page 2 of mike laird document so that any issue itemized on that list will be specifically tracked in time – xerox rollup sheet.

#### Requirements

Need to clearly define what to charge to SPI and what not to charge to it.

Need a report for goal 3, total time on spi by person and some summary for the department showing hours and percent. Goal is to spend 15% (averaged among 60% of Phil and 3% for Jerry for instance)

Define and implement correct security for each level of user.

Minimize the number of categories

Cost effective to use, integration with MS Project

Do not collect any data that we will not use

Do not break down any data that will not be used.

Terry will define what is capitalizable and what is not.

#### Report

- 1) SPI,
- 2) Cost of sales, (work done prior to a bid being signed)
- 3) capitalization (summary & detail),
- 4) project cost, (how much did we spend by customer, by release)
- 5) quality cost,
- 6) Xerox goals
- 7) Activities report (time spent on each type of activity – peer reviews, regression testing, planning)
- 8) HR report for Terry
- 9) Actuals to Estimates – how good are our estimates
- 10) Time reporting – terry will inspect, to ensure people are charging time to the right project.

Things that hit the bottom line, SPI, cap, cost of sales, projects cost – direct impact to revenue this year.

#### Processes needed

Terry does not think she needs to be involved in creating these processes

Process to fill in the Time sheet

Process to keep TimeWizard up to date (new projects, new employees, new clients, new category, )

Approval process to approve time sheets

Reporting process (generation and distribution)

Integration with Planning process (TL required)

Tool maintenance process (backup, archiving, upgrade, fail-safing and maintenance)

Capitalization determination and tool modification process (TL required)

### **Policies needed**

Time tracking policy, number 3 – who does the time tracking, what they track, what tool they use, when they do the tracking, how people will use total hours, why the policy exists, results of non-conformance.

Needs to have a policy number, and go into the asset library. (there are 2 current policies. 1) who is authorized to ship software, 2) customer communications-cost, schedule decisions)

### **Action –**

Peggy will work with Terry to create a project plan.

Lynn will work on the requirements document, including excel categories

Phil to mail excel sheet to terry.

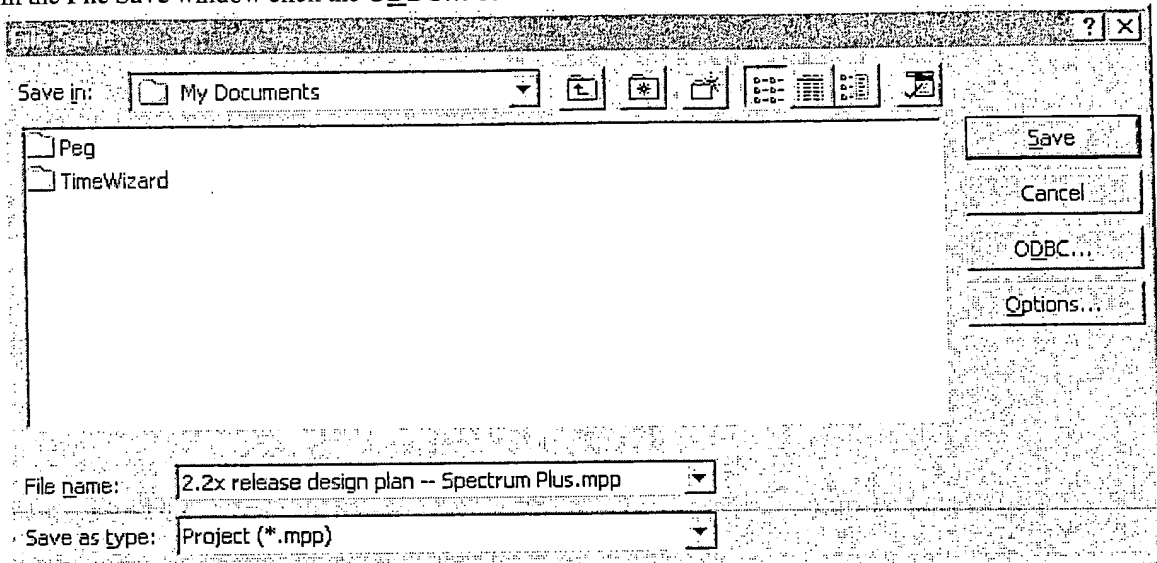
### **Definitions**

Spectrum Plus includes all modules including kits

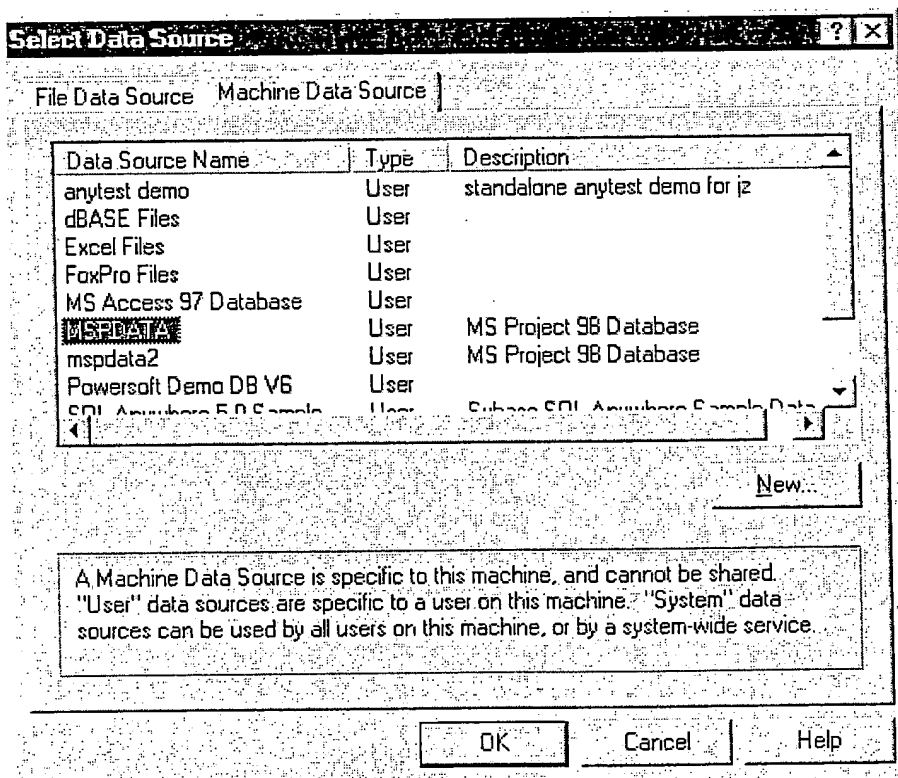
MDOT is defined as a special project

## Saving a Project 98 as Microsoft SQL Database

1. Click on **Save As...** under the **File** menu on the menu bar. (**File > Save As...**).
2. In the **File Save** window click the **ODBC...** button.

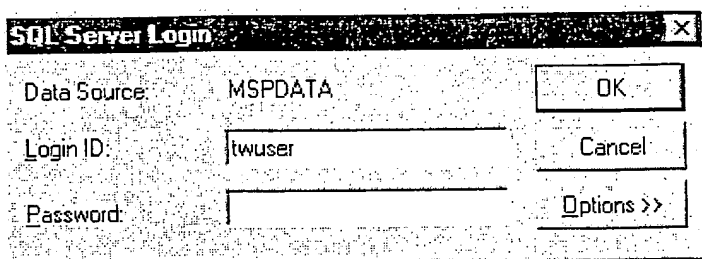


3. Select the **Machine Data Source** tab. Scroll down and select the **MS Project 98 Database Machine Data Source** that has been setup on your machine to save the Project 98 plans into.

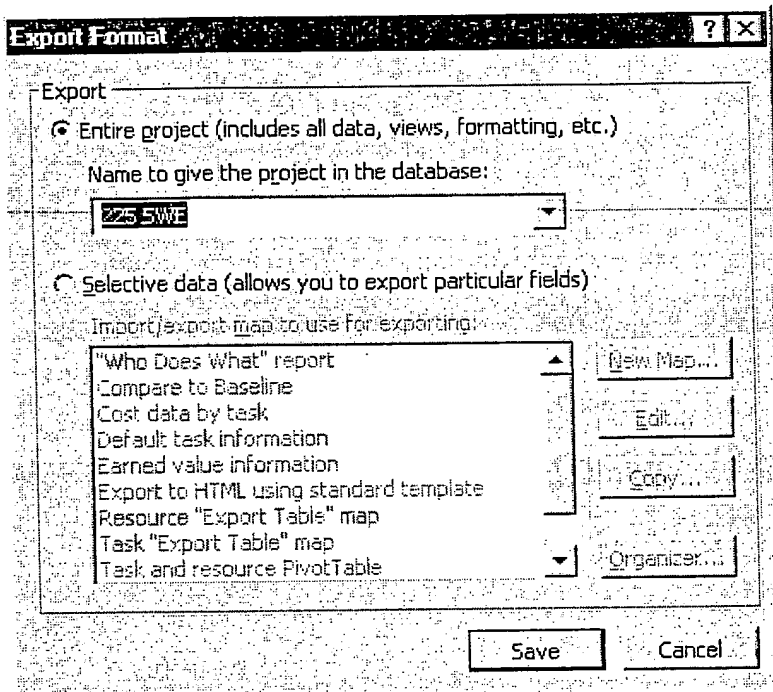


4. When you have the proper Machine Data Source selected, click the **OK** button or press the **<Enter>** key on the keyboard.

5. In the SQL Server Login window type twuser in the **Login ID:** box and twuser in the **Password:** box. Click the OK button or press <Enter> on the keyboard when you have the proper information in both boxes.



6. Type in the approved named for this project, or select it from the drop-down list if it already exists.



7. When you have the proper name in the Name to give the project in the database: drop-down list, click the Save button or press the <Enter> on the keyboard.

## Creating a New Data Source for your machine

1. Click on **Open...** under the **File** menu on the menu bar. (**File > Open...**).
2. In the **File Save** window click the **ODBC...** button.
3. Select the **Machine Data Source** tab. Click the **New...** button.
4. Follow the setup wizard:
  - Select **User Data Source (Applies to this machine only)** button then click the **Next>** button.
  - Select the **SQL Driver** from the Name box, then click the **Next>** button.
  - Click the **Finish** button.

5. This will open the ODBC SQL Server Setup window.

**ODBC SQL Server Setup**

Data Source Name:

Description:

Server:

Network Address:

Network Library:

☐ Use Trusted Connection

**Login**

Database Name:

Language Name:

☒ Generate Stored Procedure for Prepared Statement

☒ Use ANSI Quoted Identifiers

☒ Use ANSI Nulls, Padding and Warnings

**Translation**

☐ Convert OEM to ANSI characters

6. Fill in *MSPDATA* in the **Data Source Name:** box. (This will be the name that shows up on this computer.)
7. Fill in a description such as MS Project 98 Database
8. Fill in *Bradpe8* in the **Server:** box.
9. Click the **Option>>** button.
10. Fill in *MSPDATA* in the **Database Name:** box.
11. When you have the proper information filled into all boxes click the **OK** button or press *<Enter>* on the keyboard.

## Opening a MS SQL Database in Microsoft Project

1. Click **Open...** under the **File** menu on the menu bar. (**File** > **Open...**).
2. In the **File Open** window select the **ODBC...** button.
3. Select the **Machine Data Source** tab. Scroll down and select the MS Project 98 Database that holds your Project plan. It should have a Data Source Name of MSPDATA.
4. When you have the proper name in click the **OK** button or press the *<Enter>* key on the keyboard.
5. In the **SQL Server Login** window type *twuser* in the **Login ID:** box and *twuser* in the **Password:** box. Click on the **OK** button or press the *<Enter>* key on the keyboard when you have the proper information in both boxes.
6. When you have the proper name in the Name of the project in the database to import: drop-down list, click the **Open** button.

## Steps to take before Bringing Microsoft Project 98 into TimeWizard

1. Make sure the project is saved into MSPDATA MS SQL Database.
2. Make sure all tasks are of Fixed Work. (You can use the fill down option on 'Type' column.)



- The screenshot displays the Microsoft Project 2003 interface. The menu bar at the top includes File, Edit, View, Insert, Format, Tools, Project, Window, and Help. The toolbar below the menu bar contains various icons for file operations, editing, and project management. The status bar at the bottom shows the word 'Ready' and the time '9:03 AM'. The main window displays a resource list with the following columns: Resource Name, Initials, Group, Max. Units, Std. Rate, Ovt. Rate, Cost/Use, Accrue At, and Base Calc. The list contains 11 resources, all with a Max. Units of 100% and a Std. Rate of \$0.00/hr. The Accrue At column is set to 'Prorated' and the Base Calc column is set to 'Standard'.

	Resource Name	Initials	Group	Max. Units	Std. Rate	Ovt. Rate	Cost/Use	Accrue At	Base Calc
1	Alex	16		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard
2	Bryan	41		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard
3	Shampre	34		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard
4	Jerry	11		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard
5	Chet	35		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard
6	Joel	19		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard
7	Consultant	C		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard
8	Developer2	D		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard
9	Darlene	20		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard
10	David	36		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard
11	Consultant1	C		100%	\$0.00/hr	\$0.00/hr	\$0.00	Prorated	Standard

## TimeWizard Training



**BEST AVAILABLE COPY**

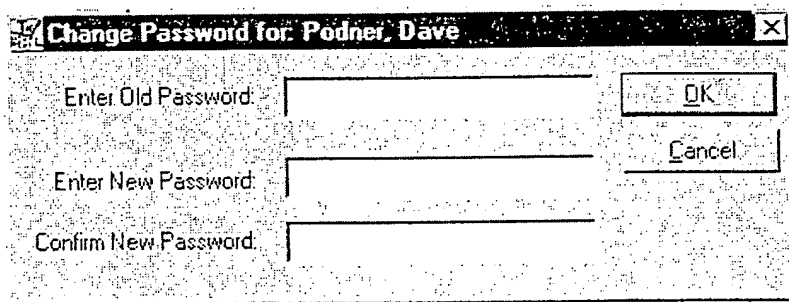
### Logging onto TimeWizard

1. Select your Login ID from the drop-down menu. You can either use your mouse to scroll through the list to locate and select your Login ID, or you can begin typing your Login ID. The Login ID for TimeWizard is the first letter of your first name followed by your last name. So *John Zitzner* would be *JZitzner*.
2. When your Login ID appears in the **Login ID:** text box press the <Tab> key on the keyboard or click in the **Password:** text box, and then type in your password.
3. Click the **OK** button or press the <Enter> key on the keyboard, when you have the proper information in the **Login ID:** and **Password:** text boxes.

### Changing your Password

To start all TimeWizard passwords have been set to the word *password*. The first time you use TimeWizard you will need to change your password to something unique. If you forget your password ask the TimeWizard administrator to reset your password. It will be reset to the word *password* unless otherwise instructed. You will need to change your password the next time you log onto TimeWizard. (Note: The TimeWizard administrator can not tell you what your current password is, but they are able to change the password for you.)

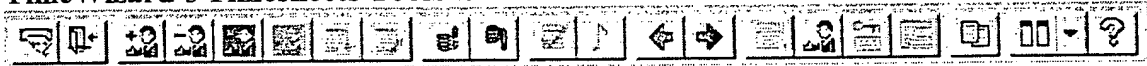
1. To open the **Change Password** dialog box click **Change Password** under the **File** menu on the TimeWizard menu bar. (**File>Change Password**).



2. In the **Change Password** dialog box type your current password in the **Enter Old Password:** text box, then type the new password in the **Enter New Password:** and the **Confirm New Password:** text boxes.
3. When you have entered the correct information in all three password text boxes click the **OK** button or press the <Enter> key on your keyboard.

*Notes: Due to encryption limitations do NOT use uppercase letters in your password, and do NOT begin your password with the letter "a". Your password must be at least 4 characters.*

#### TimeWizard's Timesheets Toolbar Icons



The **Add Assignment** icon opens the **Add Assignment** dialog box with enables you to add assignments that are available to the current timesheet.



The **Delete Assignment** icon deletes the selected assignments from the current timesheet.



The **Close Assignment** icon enables you to close the selected assignments on the current timesheet. An assignment that is closed will no longer show up on the subsequent timesheets.



The **Open Assignment** icon enables you to open a closed assignment.

*(At this time we are not using this feature. Do not fill in anything here.)*

The **Insert Detail Hours** icon inserts a new detail line to the code section of your timesheet.

*(At this time we are not using this feature. Please Do not fill in anything here.)*

The **Delete Detail Hours** icon deletes a selected detail line from the detail codes section of your timesheet.



The **Approve Timesheet** icon opens the **Approve Timesheet** dialog box and enables you to approve the timesheet currently being viewed. The timesheets of

employees who are not department managers must be approved by both the employee and their department manager.



The **Reject Timesheet** icon opens the **Reject Timesheet** dialog box and enables a manager to reject the timesheet currently being viewed.



The **Historical Corrections** icon opens the **Historical Corrections** dialog box and enables you to make journal entries to a timesheet for a period that has been closed. Historical corrections can be made by an employee, their manager or the TimeWizard administrator.



The **Notes** icon opens the **Timesheet Notes** dialog box and enables you to enter a note for any cell containing an entry and for each detail code entry associated with the cell.



The **Previous Employee** icon allows a manager to scroll backwards to view the timesheet for the previous employee in the selected department.



The **Next Employee** icon allows a manager to scroll forward to view the timesheet for the next employee in the selected department.

### Areas of the Timesheet

The timesheet is divided into four areas: *Timesheet Status Area*, *Time Reporting Area*, *Timesheet Reference Area*, and *Information Bar*.

### Time Status Area

The Timesheet Status area is located below the timesheet toolbar. This area contains the information about the specific user information.

The screenshot shows a window titled 'Timesheet' with a toolbar containing 'Read-Only' and 'Edit' buttons. Below the toolbar, there are two main sections. The left section has a 'Timesheet:' label followed by a drop-down menu showing 'Insolia, Chet'. The right section has a 'View:' label followed by a drop-down menu showing '100'. To the right of these are two more fields: 'Period Begin: 07/17/99' and 'Period End: 7/23/99', both with drop-down arrows. Below these are two more fields: 'Period Status: Open' and 'Approval Status: Neutral'.

The Left side of the status area contains the employee's name whose timesheet is displayed in the **Timesheets:** drop-down box and shows whether the timesheet is Read-Only or Edit. A manager can select the employee in their department whose Timesheet they want to view.

This is a close-up of the 'Timesheet:' drop-down menu from the previous screenshot. It shows the label 'Timesheet:' followed by a button with a pencil icon and the text 'Read-Only'. Below this is a drop-down menu with 'Insolia, Chet' selected.

The middle status will be blank if you are not a department manager. Managers will see information about the current view of the timesheet. If a manager is looking at their own timesheet they will see SELF in the **View:** box. There is a drop-down box of available departments in the **View:** box.

This is a close-up of the 'View:' drop-down menu. It shows the label 'View:' followed by a drop-down menu with '100' selected.

Period Begin: 07/17/99    Period End: 7/23/99  
Period Status: Open    Approval Status: Neutral

The Time Reporting Area is located below the timesheet status area, this area contains information about assignments for which you can enter time.

The left side of the time reporting area contains the names and descriptions of assignments for which you may enter time.

The right side of the time reporting area contains the columns and cells for each day in the week. You enter time for work completed on individual projects in these cells. The total hours entered for the week are displayed in the far right column.

Sat 7/17	Sun 7/18	Mon 7/19	Tue 7/20	Wed 7/21	Thu 7/22	Fri 7/23	Period Totals
5.00							5.00

### Timesheet Reference Area

The Timesheet Reference Area is located below the time reporting area, this area provides information about detail codes associated with a particular transaction, project information, and the total time entered for each day in the week.

PS: 07/21/99	PF: 07/21/99	Priority: 4	Customer	Hrs
ES: 07/20/99	EF: 07/20/99		1	5.00
RAS: 07/18/99	RAF: 00/00/00			
Plan: 1.0	Cum: 5.00	ETC: 1.00		
				Total: 5.00

The left side of the timesheet reference area contains task data. This data shows up when you click on any column of the time reporting area for an assignment. The task data reference areas are:

PS: 07/23/99	PF: 07/27/99	Priority: 4
ES: 07/22/99	EF: 07/26/99	
RAS: 00/00/00	RAF: 00/00/00	
Plan: 12.0	Cum: .00	ETC: 12.00

**PS:** Planned Start

**PF:** Planned Finish

The original baseline start and original finish date for an activity.

**ES:** Early Start

**EF:** Early Finish

The earliest that an activity can start or finished based on its planned/predecessor dependencies.

**RAS:** Resource Actual Start

**RAF:** Resource Actual Finish

The date an employee first entered time for an activity, or that last date the employee entered time before an activity was closed.

**Plan:**

How many hours this assignment is planned to take.

**Cum:**

The cumulative hours entered for an assignment to date.

**ETC:** Estimate to complete

Estimated hours to completion of an assignment.

**Priority:**

The lower the number the higher the priority.

*The right side we are currently not using. At this time, do not change this information.*

## The Information Bar

The Information Bar is located below the timesheet reference area. This area displays the date or information about the icon over which the cursor is positioned.

## Using the Timesheets

When you open your timesheet it will default to the current period. You can view timesheets from previous or future periods.

To view previous or future timesheets

1. Click on the arrow in the **Period End:** text box in the timesheet status area to display a drop-down list containing the ending dates of the currently defined approval periods.

Period End: 7/16/99

2. Scroll up or down and click on the period you want to view.

## Entering Time

1. Click on the timesheet cell for the assignment and day for which you want to enter time.
2. Enter the number of hours you have spent on the assignment for that day. The entries can be between .01 and 24.00. *Please do not enter a time less than .25.*
3. Press <Enter> or the <Tab> key on the keyboard to save the time entry.

[illegible]

Notice when you enter time, the assignment total on the far right of the screen in the time reporting area is updated, as is the daily total on the bottom of the screen in the timesheet reference area. The assignment and daily total cells are color-coded.

Green means you have entered exactly the number of hours defined as your standard work week or standard work day.

Yellow means you have entered less than the number of hours defined as your standard work week or standard work day.

Red means you have entered more than the number of hours defined as your standard work week or standard work day.

## **Maintaining Time Entries**

You can alter or clear the contents of a timesheet cells.

### **Changing time**

1. Click on the appropriate cell.
2. Type in your new hours.
3. Press <Enter> or <Tab> key on the keyboard or click on another cell to save and update.

### **Clearing the content of a cell**

1. Click on the appropriate cell.
2. Use the <Delete> or <Backspace> key on the keyboard.
3. Press the <Enter> or <Tab> key on the keyboard or click on another cell to save the update. (Do not type 0 in the cell.)

### **What is a Locked Cell?**

A locked cell is a cell under which you cannot enter time or make changes to an entry in a timesheet cell because the cell is “locked”.

Cells will be locked:

- *If your timesheet has been approved.*  
Having your department manager or TimeWizard clear the approval will enable you to edit the data.
- *If the assignment has been closed.*  
Opening the assignment will enable you to enter time or make changes to the entry.
- *If the period has been closed.*  
You must make historical corrections to edit data in a closed period.

## **Timesheet Notes**

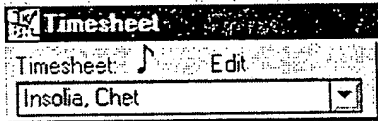
TimeWizard notes create ongoing records of timesheet transactions and encourages more effective and accurate communication by all TimeWizard users. Some timesheet transactions require users to compose a note of explanation. There are three types of notes.



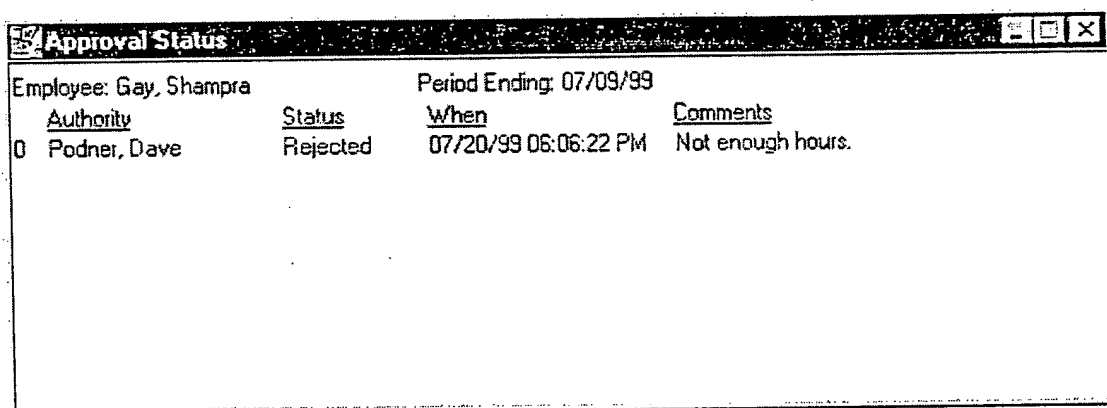
**Transaction Notes:** This note type is attached to a specific detail code in a timesheet transaction. A shaded timesheet cell and a Notes icon at the left end of the detail code row indicates a transaction note.



**Timesheet Summary:** This note type is attached to the whole timesheet for a specific time period.



**Employee Edit:** This note type is attached to the timesheet transaction after the timesheet has been edited by another user. (e.g. by a department manager)



### Transaction Notes

1. Select the detail line for which you want to leave a note.
2. To open the **Transaction Notes** dialog box, click on **Timesheet** on the menu bar, and then select **Notes....** (**Timesheet > Notes...**) or double-click on the timesheet cell for which you want to attach a note.
3. Click on the **Text ID:** data window to select a standard or user-defined note.

**Notes - Transaction Notes**

I had to work overtime on this task.

Standard Comments for: Transaction Notes

Text ID:

Last modified: 35 - Clnsola  
7/20/99 18:12:46

OK Cancel Apply Help

Buttons: Cut, Copy, Paste, Save To, Load From

- When you have selected or composed the appropriate note, click the **Apply** button to save the note and remain in the **Transaction Notes** dialog box or click the **OK** button to exit the dialog box.

The last Modified section of the Transaction Notes dialog box records the name and the employee ID of the note author and the date and time the note was modified.

#### Reading Transaction Notes:

Each detail code associated with a timesheet transaction can have its own transaction note

- If more than one note exists for a timesheet transaction double-click on the detail code line that contains the note you want to read. A note icon at the left end of the detail code row indicates a transaction note.
- If only one note exist for the transaction double-click the timesheet cell that contains the note you want to read. A shaded timesheet cell indicates a transaction note.

Type	Content	Description	Sat 7/17	Sun 7/18	Mon 7/19	Tue 7/20	Wed 7/21	Thu 7/22	Fri 7/23
GENE	GO	General Office			5.00				
GENE	TC	Training/Conferences				8.00			

#### Timesheet Summary

- Open the Timesheet Summary dialog box, by selecting **Summary...** under the **Timesheet** menu from the menu bar. (**Timesheet>Summary...**)
- Click on the **Text ID:** data window to select a standard or user-defined summary

3. When you have selected or composed the appropriate note, click the **Apply** button to save the note and remain in the **Note-Timesheet Summary** dialog box or click the **OK** button to exit the dialog box.

### Employee Edit

This note type is attached to the timesheet transaction note after the timesheet has been edited by another user. (e.g. the department manager or TimeWizard administrator.) The employee edit note is attached to the edit transaction, a shaded timesheet cell indicates the edit note.

TimeWizard requires users to provide a reason for employee edits. When a department manager is viewing another employee's timesheet they are locked into read-only mode until they leave an employee edit note.

1. Click on the **View:** drop-down list to select the department that contains the timesheet you want to view. Scroll through the drop-down menu to make a selection.
2. Click on the **Timesheet:** text box to display a list of employees. Scroll through the list to select the appropriate employee timesheet.
3. Click the **Employee Edit** icon to open the Notes Employee Edit dialog box.

**Notes - Employee Edit**

Your timesheet was corrected see your TimeWizard Administrator for details.

Cut Copy Paste Save To Load From

Standard Comments for: Employee Edit

Text ID: Edited Last modified:

OK Cancel Apply Help

4. Click on the **Text ID:** box to select a standard or user-defined note.
5. When you have selected or compose the appropriate note, click the **Apply** button to save the note and remain in the Employee Edit dialog box or click the **OK** button to exit the dialog box.

Once the **Employee Edit** note has been saved, the department manager is able to edit the timesheet.

#### Working with Assignments from the Timesheet

Assignments on the TimeWizard timesheet are defined as tasks for which an employee can enter time.

#### Adding Assignments:

1. Select **Add Assignments** from the **Timesheet** menu (**Timesheet > Add Assignments**) or click on the **Add Assignment** icon to open the **Add Assignment** dialog box.

2. Select the desired filtering parameters in the activity quickfilter.

**Add Assignment**

Type: 225 SWE Content: <All> Retrieve

<All>  
225 QE  
225 SWE  
GENERAL

No Rows

OK Cancel Apply Help

3. Click the **Retrieve** button.
4. Click on the activity you want to add to your timesheet as an assignment.

**Add Assignment**

Type: 225 SWE Content: <All> Retrieve

Type	Content
225 SWE	1583 MDDT Centralized Database project Unit Test
225 SWE	1716 0334 - Kits Create GO TO Button for Component search Unit Test
225 SWE	1717 0334 - Kits Create GO TO Button for Component search Code
225 SWE	1718 0334 - Kits Create GO TO Button for Component search Spec Review
225 SWE	1719 1461 - Kits Disbursement report initial value/check box = Y - Sys Config Un
225 SWE	1720 1461 - Kits Disbursement report initial value/check box = Y - Sys Config Cc
225 SWE	1721 1461 - Kits Disbursement report initial value/check box = Y - Sys Config Sp
225 SWE	1723 4787-Gather Kits on PickTicket Code
225 SWE	1724 4787-Gather Kits on PickTicket Spec Review
225 SWE	1727 4822-Allow Gathering of Stocked Kits/non-pickable bins Unit Test
225 SWE	1728 4822-Allow Gathering of Stocked Kits/non-pickable bins Code

Rows 1 to 11 of 28

OK Cancel Apply Help

You can select multiple assignments by holding down the <Shift> key or <Ctrl> key, on the keyboard while clicking. Like many windows applications, the shift key will give you contiguous items, and the Ctrl key will allow you to select non-contiguous items.

5. Click the **Apply** button to add the selected assignment(s) to the timesheet and remain in the dialog box, or click **OK** to add the assignment(s) to the timesheet and exit the dialog box.

### **Deleting Assignments**

You may only delete an assignment from the timesheet if there are no transactions applied (no time entered) on the timesheet for that assignment in any period, open or closed.

1. Click on the first column of the assignment row to select the assignment to be deleted.
2. Select **Delete Assignment** from the **Timesheet** menu (**Timesheet > Delete Assignment**) or click on the **Delete Assignment** icon.
3. TimeWizard displays a **Delete Selected Assignment?** dialog box. Click **OK** button to delete the assignment and return to the timesheet.

### **Closing assignments**

Closing an assignment means that all work has been completed. When an assignment is closed no additional timesheet transaction may be applied to it.

1. Select the assignment by clicking anywhere on the row containing the assignment.
2. Select **Close Assignment** from the **Timesheet** menu (**Timesheet > Close Assignment**) or click on the **Close Assignment** icon to open the **Close selected assignment?** dialog box.
3. Click the **OK** button to save the setting and return to the timesheet.

If the assignment has no time applied to it on the timesheet, it stays on the timesheet until the next week, and then drops off. If time has been applied to the assignment closing it will lock the assignment, which means no further transactions can be applied to it. When the row for that assignment is selected, "Closed" is displayed in the reference area of the Timesheet window.

### **Opening Assignments**

Opening a closed assignment allows employees to begin entering time for that assignment again.

1. Select the assignment by clicking on the row containing the assignment.
2. Select **Open Assignment** from the **Timesheet** menu (**Timesheet>Open Assignment**) or click on the **Open Assignment** icon to open the **Open the selected assignment?** dialog box.
3. Click the **OK** button to open the assignment and return to the timesheet.

### Approving Timesheets

Timesheets need to be approved by the employee and then their department manager. A department manager can approve their own timesheet, and does not need an additional approval.

1. Once you have checked your timesheet for accuracy, to approve your timesheet selecting **Approve Timesheet...** from the **Timesheet** menu (**Timesheet>Approve Timesheet**) or double clicking the **Approve Timesheet...** icon.
2. This will open the **Approve Timesheet** dialog box.
3. Comments are optional when you approve a timesheet.
4. Click the **OK** button to save your approval and return to the timesheet.

### Using Department Timesheet Functions

If you are a department manager you can perform department functions from the TimeWizard timesheet.

### Viewing Departments

You can view the timesheet of employees in your department.

The screenshot shows the 'Timesheet' application window. At the top, there are fields for 'Period Begin: 07/17/99' and 'Period End: 7/23/99'. Below these are 'Period Status: Open' and 'Approval Status: Neutral'. A 'View:' dropdown menu is open, showing a list of departments with '100' selected. Below the dropdown is a table with columns: Type, Content, and a grid of dates from Sat 7/17 to Fri 7/23, followed by a 'Period Totals' column. The first row of the table shows 'SELF' under the 'Content' column.

Type	Content	Sat 7/17	Sun 7/18	Mon 7/19	Tue 7/20	Wed 7/21	Thu 7/22	Fri 7/23	Period Totals
	SELF								

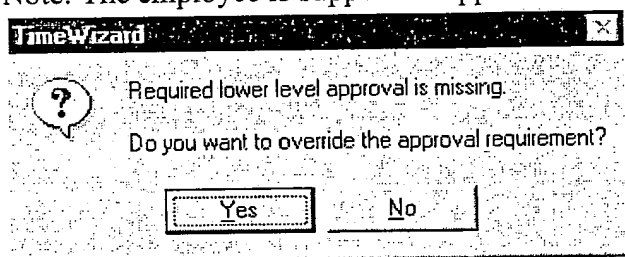
1. Click on the **View:** text box found in the middle of the timesheet reference area to open a drop-down box containing a list of departments for which you have permission to view.
2. Select the department you want to view.
3. The timesheet of the first employee in the list for that department appears.
4. To view a particular employee click on the **Timesheet:** drop-down list of employees in the department and select the employee you want to view.
5. If necessary select the period you want to view by selecting the end date of the period from the timesheet reference area.
6. As a department manager you need to add an employee note and then you will be able to:
  - Add, delete, open or close assignments.
  - Make historical corrections
  - Enter or change time on the timesheet.
  - Approve or reject the timesheet.
7. Select the **Next Employee** or **Previous Employee** from the **Timesheet** menu (**Timesheet>Next Employee**) or (**Timesheet>Previous Employee**) or click on the toolbar **Next Employee** or **Previous Employee** icons to view the timesheet for the next or previous employee in the department.

## Approving and Rejecting Timesheets

### Approving a timesheet

1. View the timesheet you want to approve (*Be sure you have opened the correct timesheet in the correct period.*)
2. Select **Approve Timesheet...** from the **Timesheet** menu (or click on the **Approve Timesheet** icon to open the Approve Timesheet dialog box.

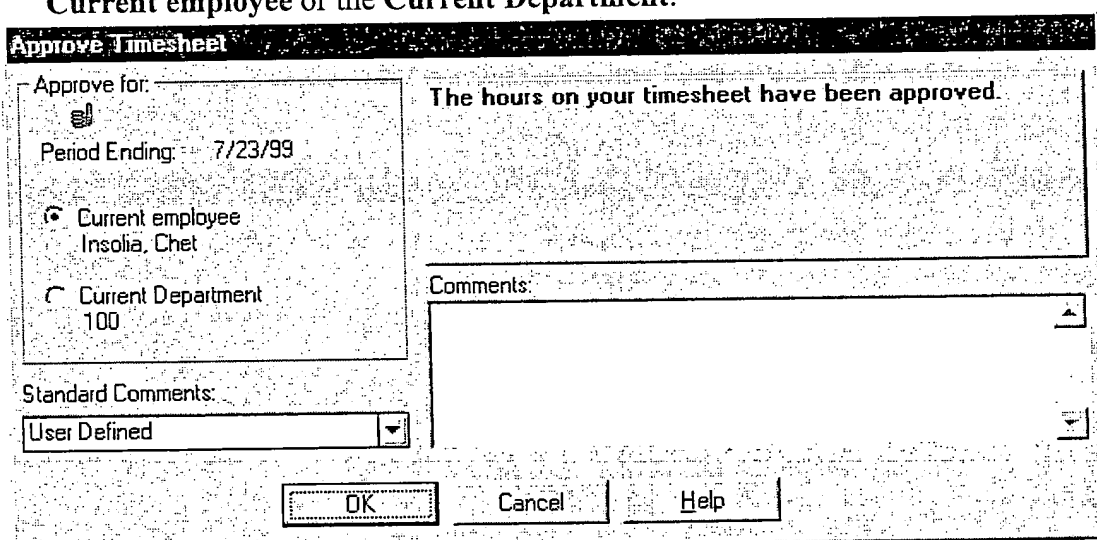
Note: The employee is suppose to approve the timesheet before the manager approves



the timesheet, but a manager may choose to approve a timesheet that hasn't been approved by an employee by clicking the **Yes** button in the window stating Required lower level approval is missing. (Note this window will

only show up if the employee has not already approved their timesheet.)

3. Click on the radio button to indicate if you are approving the timesheet for the **Current employee** or the **Current Department**.



4. Click on the text box to type comments associated with your approval is desired.
5. Click **OK** button to save the settings and close the dialog box.

### Rejecting a timesheet:

Note: TimeWizards requires you to provide a reason for a rejection. You may select either a standard note or compose an original note.

1. View the timesheet you want to reject. (*Be sure you have opened the correct timesheet in the correct period.*)
2. Select **Reject Timesheet...** from the **Timesheet** menu or click the **Reject Timesheet** icon to open the Reject Timesheet dialog box.



**Reject Timesheet**

Reject for:

Period Ending: 7/23/99

☒ Current employee  
Insolia, Chet

☐ Current Department  
100

Standard Comments:  
Rejected

Comments:

Not enough hours.

OK Cancel Help

3. Click on the radio button to indicate if you are rejecting the timesheet for the **Current employee** or the **Current Department**.
4. Click on the text box to type comments associated with your rejection.
5. Click the **OK** button to save the settings and close the dialog box.

Note: When the manager has rejected a timesheet, an email will be sent to the employee telling them the timesheet has been rejected.

**From:** Terry Light  
**Sent:** [REDACTED]  
**To:** Peggy Koontz  
**Cc:** Darlene McFadden; Terry Light; Phil Foell  
**Subject:** Special Program Bidding Process

Possible states of special Programs:

- Requested, waiting for bid  
Our goal is to turn these around as quickly as possible. The design manager provides estimates for each department (Support, Design, Development and Quality) to Peggy who records the information and meets with Terry to develop the dollar figure. We call the customer and ask if they want us to write it up.
- Verbal bid provided, waiting for okay to write up (this may need follow up if we haven't heard from the customer in one week)
- Verbal bid received, writing up bid
- Bid sent, waiting for approval from customer (this may need follow up if we haven't heard from the customer in one week)
- Bid approved (Sale made), scheduled into Production

The above "brainstorm" information needs to be refined / improved upon and turned into a documented process for bidding Special Programs. This note was intended to describe the state changes but we may have missed some. Feel free to rename as long as the names are descriptive. Thanks.

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